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AMERICAN VETERINARY REVIEW

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AMERICAN VETERINARY REVIEW.

JUNE, 1909.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, April 15, 1909.

OCULO AND CUTANEOUS TUBERCULIN TESTS.—I would scarcely entertain our readers any more on the various new tests of tuberculin, and yet must they not know of the appreciation which exists among practitioners besides those that I have alluded to already? After all, it is most likely that only from the results recorded by those who have made special experiments that the value and the indications of cutaneous or ocular tests will be accepted and will enter into common practice. On this account, let us examine what some German writers have said in the *Berliner Tierarztliche Wochenschrift.*

A Doctor Reinecke has made minute study of the question, reviewed all that has been done, criticises it, and after examining the works carried out by most French observers, he says: That with Prof. Eber he has experimented the different methods of tuberculination, either by the cutaneous or the ophthalmic reaction method, and that out of 25 animals tested by the dermo-reaction, one only gave him a slight reaction and that at autopsy no lesion could be found. In the 24 others two had lesions, although among them six had also reacted to sub-cutaneous injection of tuberculin. With the ocular test five animals were used, three gave a slight reaction, two had lesions, two which had not reacted had no lesion, and the last neither, although he

had reacted to the instillation in the eye. The conclusions are. It is doubtful if the cuti or the oculo-reaction can give as good results as those obtained with the sub-cutaneous injection.

Another experimentator, Doctor Wolfel, has also made extensive tests. In one upon 57 animals and in another upon 13 cows clinically tuberculous and on three suspected steers. For those, he used the ocular tests, the animals having also received a sub-cutaneous injection of tuberculin. The following are the conclusions arrived at:

1st. All the animals that react with the sub-cutaneous injection of tuberculin do not, however, always give a positive reaction.

2d. The subcutaneous injections made before the installation in the eye, does not interfere with the results in any way.

3d. Reaction is better noticed between the 12th and 18th hour after the instillation.

4th. It is not accompanied with any hyperthemia.

Conclusions: The operation has no great practical value.

And yet in the *Deuts. Tierarz. Woch.*, Garth, Kranich and Grunert admit that the oculo-reaction is a sure means of diagnosis, simpler and quicker than tuberculinization; while the cuti-reaction seemed much more uncertain and for them has no diagnostic value. In the *Monatsch. für Praktische Thier.*, Klemmer and Kiessig consider the ophthalmic-conjunctivo reactions as a precious method.

And as long as I am writing on tuberculin test, let me mention the one which I just find in the *Presse Medicale*, the *Rhino-reaction*, although it will not be practical for veterinarians, but that the authors recommend as superior to the oculo-test, because of its harmless effects. It consists in a reaction with peculiar constant characters manifested by an exudate, which forms and dries up upon the congested mucous membrane of the nose as a small yellowish crust, which drops after a while or can be removed with forceps. The method of application is very simple. A small billet of wadding is dipped in a solu-

tion of tuberculin, 1 per cent., and applied on the nasal mucous membrane where it must remain for ten minutes. This is sufficient to obtain the reaction, which begins between 18 and 48 hours after and lasts for several days. The authors have tested the method in 100 cases and have obtained excellent results.

* * *

SUB-CUTANEOUS AND INTRA-DERMO TESTS.—This general apparent diversity of opinions of the preceding experimentators as to the value of the various tuberculin tests in question, reminds me of the similar appreciation given by other experimentators. And it seems as if all the new methods of tuberculosis diagnosis with tuberculin, such as the ophthalmo, the cuti, the dermo reactions, while they may sometimes be resorted to and perhaps give indications as to the condition of the animal and upon which one could depend, they, however, cannot enter into the general practice except in some special given circumstances.

An exception, nevertheless, to this may be made in favor of the most recent application, that of the intra-dermal injection patronized by Prof. Moussu. The experiments made with it have been gathered and they form to-day a very imposing representation of successful tests. The results are said to be CONSTANT, and besides the general advantages of being applicable to all other species of animals, the porcine, for instance, it is strictly *specific* to tuberculosis. With non-tuberculous animals or in those that are affected with other diseases the result is always negative.

Even Prof. Vallee, who at first seemed to be unwilling to accord to it a better appreciation than the one which he accepted for the other tests, is to-day acknowledging it as the *test of choice*, superior to any other methods of "local reaction." With Vallee it has given a special immediate manifestation on the spot of inoculation, whose importance seems to be of some value, although not present in every case, finally it is to be recom-

mended in all doubtful instances, and if the results should be doubtful, a confirmation should be looked for with the subcutaneous injection, which is always (and principally with animals recently purchased), the best method, especially if the injection of a double dose of tuberculin is used, when fraud is suspected and with taking the records of the temperature from the 12th hour.

Resorting to these methods appear to be the answer to the good editor of the *Semaine Veterinaire,* who put the question as to what conduct should be followed by the testing veterinarian, so as to avoid all kind of blame or difficulties in cases of discussion occurring before a court in law suits.

* * *

Occult Tuberculosis.—In last month's chronicle, speaking of the anatomical characters of the tuberculosis infection, I recorded the statement of Prof. Arloing: "Tuberculous infection does not necessarily impose the apparition or the presence of macroscopic lesions." Again, in a more recent publication, the learned gentleman referred to the fact that positive reactions of tuberculin may perfectly take place with manifest or concealed tuberculous infection. Thus alluding to the observations made by him in the many years of his researches on tuberculosis.

Lately in the *Recueil de Medecine Veterinaire,* Vallee has written an article on "Occult Tuberculosis," confirmation and explanatory of the allusions I just made above. Let me resume it.

The attention of veterinarians and specially of meat inspectors must be called to the fact that the invasion of the glandular tissue, in animals as well as in man, whether in natural or experimental conditions, *does not always give rise to the rapid realization of manifest macroscopic lesions* and that a transitory condition of the bacillar infection may last for a varied length of time, sometimes very long. This condition that Germans call *latent* tuberculosis, Vallee names it *occult.* It refers evi-

dently also to the *concealed* lesions of Arloing. These forms of tuberculosis are not a new discovery. Mentioned since 1880 by investigating human physicians, it was shown by their researches that there exits in man an occult glandular tuberculosis, which is not revealed by microscopic examination nor histological control, but is only made manifest by inoculation to the guinea pigs. Of course, veterinarians became interested and Orth, Arloing, Lignieres, Vallee, Joest and his assistants Noack and Liebrecht, etc., brought out proofs that in various circumstances thoracic and abdominal lymphatic glands apparently healthy, but taken from animals which had reacted to tuberculin, did not present any apparent lesions of tuberculosis. And in many instances by inoculation to guinea pigs it was demonstrated that these organs were virulent although they appeared macroscopically healthy. An important confirmation of Arloing's words: "The means of experimental diagnosis reveal the bacillar infection rather than the presence of tuberculous lesions." And this probably could explain the pretended failures of tuberculin. "It is then allowed to comprehend the disagreeing records, more apparent than real, that are exhibited between the experimental diagnosis and the post-mortem one."

Prof. Vallee concludes his article in recommending the systematic research of occult tuberculosis, specially to sanitary inspectors. He gives some indications which are doubtful in their results. Finally, he ends in saying that many cannot be suspected nor discovered except by inoculation to guinea pigs. A process that one cannot think of resorting to very commonly.

* * *

CHICAGO STOCK YARDS AND VETERINARY INSPECTION.—I do not know exactly what may have been the immediate results of the campaign carried on some time ago against the stockyards of Chicago and about the Sanitary Veterinary Service in the United States. What was said and written against them must, however, have brought some changes and probably im-

provements. To appreciate those, a visit to the Stock Yards would impose itself. And it is just what a "Special Sanitary Commissioner of the *Lancet*" has done.

In the *Veterinary Record* of April 3, under the heading of "Chicago Stock Yards Revisited," the gentleman gives a concise appreciation of what he has seen and brings out points which, I think, for the respect and dignity to the profession, sanitary veterinarians referred to, ought to be acquainted with.

The article of the Special Sanitary Commissioner of the *Lancet* treats of three points which I take the liberty to reproduce.

1st. THE INCREASED NUMBER OF INSPECTORS. He says: "To analyze the new laws that have been enacted in response "to the agitation against the Chicago Stock Yards would take "much time and space. I am anxious to record my personal "impressions on revisiting the Stock Yards now that better "laws exist, and improvements have been effected. But laws "are not of much use unless there is an effective machine for "putting them into force. At the commencement of the year "1906 it was publicly stated that the Federal Government of "the United States employed in the packing houses of the en-"tire country a total of 411 inspectors, and it was then cal-"culated that if these inspectors were on duty for eight hours "during 300 days in the year they would have to examine 105 "animals per hour. Dr. A. D. Melvin, Chief of the Bureau "of Animal Industry, last October very courteously wrote to "me, saying:

"'*I shall take pleasure in giving you the following figures "'concerning the Federal meat inspection. This inspection is "'conducted at 338 establishments at which animals are slaugh-"'tered. The total force employed numbers 2,290, of whom "'702 are veterinarians. The force at Chicago numbers 344, of "'which 108 are veterinarians. These figures do not include "'clerks.*'"

* * *

Having thus established the statistics of the force, the *Lancet* Commissioner passes to the second point: How VETERINARY SURGEONS ARE MADE UP TO "SPEED THE PACE."

"This simple statement of fact is eloquent and shows that "much has been accomplished in a short time. Nevertheless, "and in spite the increase of the staff I could not but feel "scandalized when I saw the manner in which the veterinarians "and inspectors were made to work. The dignity of a scientific "profession is entirely sacrificed to the necessity or imagined "necessity, for speed, and it is difficult to do good professional "work under completely faulty condition. Highly qualified "men of science are made to hustle along in semi-darkness "through filth and slush, ever 'speeding the space,' the victims "of a spirit of rush by which some efficiency must be lost. The "giant engine is concealed in the darkness below, ever churn-"ing and churning, turning hundreds of flywheels, transmitting "its power to thousands of little wheels on which animals both "dead and alive are suspended and move forward among the "butchers, the dressers and the skinners. While these animals, "as they travel along, are being killed, flayed and cut open, "the veterinary surgeon follows and inspects. So that this "inspection shall not occasion any delay, the labor is subdi-"vided. The glands of the neck are hastily felt as the animal "passes the first inspector; the viscera as they are cut out glide "down a slope in front of a second inspector; and, finally, the "carcass is looked into after the viscera have been removed as "it passes the third inspector. The viscera of pigs have to be "examined with such rapidity that a relief veterinarian stands "behind the inspector to help him in case of exhaustion and de-"lay * * *."

* * *

The third point is a call to the WANT OF DIGNITY IN THE PROFESSION. In this part of his article the Special Sanitary Commissioner of the *Lancet* first hesitates in making comparison

with this slave work thus performed by the veterinary inspectors, but he cannot help thinking of picturing it to something of the slavery work described in " Uncle Tom's Cabin " and then he goes on, not without right:

" These (the slaves) could not help themselves. But surely " such is not the case with members of a learned profession " who have the honor of representing as government function- " aries the wealthy United States of America. It is high time " the veterinary surgeons in the employ of the United States " Government should insist on being treated with due consid- " eration, should refuse to be hurried in the way that they now " are or to do their work in dark, crowded, unclean places. They " should insist on having all the leisure necessary to pause and " to deliberate over any doubt that may arise in their minds, " instead of having, as at present, to keep pace with a machine. " Also, how can science progress if a scientific man is, by the " subdivision of labor, kept all the year round doing exactly " the same detail of post-mortem examination. Veterinary in- " spection, as I saw it, clearly serves useful purposes, but it can " only be really efficient by altering the conditions of work."

And then he continues: " On the killing floor for large ani- " mals, the veterinary surgeon has to walk up and down exam- " ining the viscera. On one killing floor this meant, I was as- " sured, that on ordinary days the inspector, in going backwards " and forwards, walked from seven to eight miles and when " there was a great rush of work he might have to walk some " ten miles. * * * "

* * *

After reading the above paragraphs, one may ask what is the object of publishing these in the REVIEW? The object is to ask if, leaving aside all possible exaggeration to which a writer may sometimes allow himself, almost unwillingly to fall in, the report does not contain many inadmissible facts.

It is certain that the Special Commissioner has had no intention to denigrate nor do any injustice to the gentlemen em-

ployed in the veterinary inspection service of the United States. We may accept that he has recorded just what he has seen, as he says. But the *Lancet* is the great medical paper of *England,* the *Veterinary Record* is one of the most read in our professional world, and certainly the article will be read by many.

Does not a rebuttal impose itself? I do not ask it in reference to the part which speaks of the work relating to the slaughtering proper nor how it is carried out; but is it not necessary, is it not due to the inspectors alluded to, to the profession of America and to its good reputation throughout the world!

The condition of this service of inspection must be thoroughly known and made clear. We have no doubt that Chief Melvin will show to the medical and the veterinary profession that this railroading way of making an inspection is unknown in the United States and that the sanitary inspectors under him know as well as any one, what is consistent and proper with the dignity of their profession, which, should the statement published in the *Lancet* be correct, would on the contrary be lower than one could ever dream to see it. Let Chief Melvin answer the Special Sanitary Commissioner.

* * *

ENGLISH TUBERCULOSIS COMMISSION.—Our English contemporaries are giving now extracts of the third report of the Royal Commission on Tuberculosis. Among the conclusions I find the following: "Tuberculosis of the udder is relatively frequent in cows; and in this case the milk contains bacilli and is dangerous for people to use. A question remains to solve, what danger was presented by milk taken from tuberculous cows, which had no lesions in the udder. Many observations were made and experiments carried out. Two conditions had to be examined separately. Cases where the disease was manifested by cough and loss of appetite and those where tuberculosis was not detected by the injection of tuberculin."

"None of the cows examined, presented mammary tuberculosis, which was not noticeable clinically and in all, the udder

was carefully examined after killing. Lesions were never found, except in one case where in one quarter four small nodules which could not have been detected by clinical examination. It was established that the milk of tuberculous cows contain bacilli, whether it was obtained by the ordinary milking or extracted with aseptic instruments. The presence of bacilli in the milk of cows *clinically* tuberculous confirms the opinion expressed in the second report of the Commission that the milk of these animals must be considered as dangerous."

"The experiments carried out in relation with the infectious condition of fæces of tuberculous cows were suggested by the observations, that milk is often soiled by very various impurities and very often by excrementitial matters when it is offered to the consumer. Cows affected with open tuberculosis, cough out large quantities of bacilli and some of those may drop in the milk. But the experiments show that cows affected with pulmonary or intestinal tuberculosis are much more dangerous by their excrements than by their discharge from the nose or their expectorations. Cows that have only small lesions throw out but few bacilli by the intestines, but in animals clinically tuberculous the fæces contain enormous quantities of living and virulent bacilli."

"The presence of tuberculous with healthy cows in the same barn is peculiarly dangerous as fæces containing bacilli may soil the milk of both classes of animals."

* * *

Veterinary Congress in Pretoria.—A veterinary conference, or better, a South African Veterinary Congress, has been recorded through the professional and the general press of England and the news spread all over the continent. The news was pleasant to hear and all agreed as to the importance that such reunions can have and the good that it may do.

The first, I believe, of its nature; the gathering took place in Pretoria, in January last, and was attended by members of the profession from the Southern part of Africa nearly as far

up as the equator, including Madagascar. Indeed, in the photography that was published in the *Veterinary Record* there are the likenesses of men coming from the Transvaal, Natal, Basutoland, Bechuanaland, Madagascar, Belgian Congo, Cape Colony, German S. W. Africa, Portuguese E. Africa, etc., etc. The program was unusuallly interesting and the papers called for very serious discussions, among them were Glanders, Tuberculosis, Lung Sickness, Rabies, Epizootic Lymphangitis, Trypanosome diseases, etc.

Before adjourning, a committee was appointed to take the necessary steps to insure the success of the next conference. I wonder if one day the international veterinary congress will not be held over in South Africa. Rather far, but a grand trip, anyhow!

* * *

BIBLIOGRAPHICAL NOTES: VETERINARY SURGICAL OPERATIONS.—I welcome Volume III. of Veterinary Surgery of Prof. Louis A. Merillat, of the Chicago Veterinary College, which is published by Alexander Eger, of Chicago.

Under the title of "Veterinary Surgical Operations," the learned professor completes the series of his works. The first volume published in 1905 had for title "Animal Dentistry and Diseases of the Mouth." The second presented the reader with the "Principles of Veterinary Surgery," issued in 1907. Again, after two years, the work is finished and is well completed. It is certain that known as the author is, with the undoubted success that his two first publications have met with, the third will be to all veterinary students and practitioners, as it is to me, "Welcome." The professor and I are strangers, we know of each other only by correspondence, therefore, I can scarcely be suspected of partiality when I write this word.

I have found "Veterinary Surgical Operations" good because it is written in an easy reading manner, because the subjects are well arranged, the description concise, the technics well described, all the minutiæ of surgical preparations, restraint, indications, equipments, etc., etc., all are well drawn.

Of course, I have objections, which I regret, but after all if I make them, they do not take anything from the value of the work. And besides, the author makes almost apologies for their possibilities. Why ignore so entirely classical operations as he remarks in the preface. Some certainly are and will remain good. The methods of performing operations as the author describes them, are those of the author. I like that! But why avoid comparison which might have been in his favor. And again, if we are to accept that principle, the conclusions as to the usefulness of the operations as the resume of the author's observations, can I not ask him why he still holds to the old fashion of phlebotomy with fleams, when more modern surgery resorts to the trocar, as *safer, cleaner* and *more scientific.* (Of course, I allude to general blood-letting, not to that for experimental purposes which the professor briefly describes.)

And again, as long as some operations ought to be omitted, why did you not, my dear Doctor, ignore once for all that old and horrid method of docking with its annex, the forge and the special firing iron, as long as you give such a good description of this method, *the most surgical,* of amputation of the tail, the *dovetail method.*

But of course these are, let us say trifling objections, and as I have said they do not diminish the good qualities of this new addition to our American veterinary literature.

Well gotten up, handsomely illustrated, sufficiently and not to excess, with a little over 500 pages of reading matter, the entire contents are divided into thirteen chapters. An introduction with illustrated description of what I suppose is *the* modern-operating-room of the new world, opens the book and is followed by the contents of the chapters: Surgical Processes, Elementary Operations, Neurotomy, Tenotomy and Myotomy, Castration and Spaying, Fistulas, Throat Operations, Hernia, Lithotomy, Special Amputations, Abdominal Operations, Choke, Miscellaneous Minor Operations, Accidents. All of which will certainly be read with pleasure and profit.

* * *

REPORT OF THE BUREAU OF ANIMAL INDUSTRY.—The twenty-fourth report of the Bureau of Animal Industry has reached me. This issue is quite regular in its arrival and when it comes it always brings a quantity of most valuable material. For many and certainly for the officials principally, it only shows the work done; but for the practitioners, the veterinarians and the agriculturists, the contents that are found yearly in the publications that Chief A. D. Melvin transmits to the Secretary of Agriculture, and that are printed, bring to the interested reader information that would otherwise remain unknown and lost. Among the pages of this volume there is a paper by Mr. Georges M. Rommel, of the Bureau, on the "Preservation of Our Native Types of Horses," with numerous illustrations where important facts relating to the breeding of carriage horses in Colorado, Vermont and other states are related and where professors of zootechny in our veterinary colleges will gather very valuable instruction. And again, as already in the days when the material for this 24th report was being gathered, the question of milk was beginning to be agitated. Of course, the officers of the Bureau settled to work, and see the results. "The Effects of Diseases and Condition of Cattle Upon the Milk Supply," by Dr. J. R. Mohler; "Some Important Factors in the Production of Sanitary Milk," by Mr. E. H. Webster; "The Classification of Milk," by Chief A. D. Melvin; "Milk and Its Products as Carriers of Tuberculosis," by Dr. E. C. Schroeder. Milk inspection is decidedly coming as THE opening for veterinarians. *Tuberculosis*, of course, occupies a certain amount of space with communications from J. R. Mohler and from H. J. Washburn. There is also a very interesting article by A. D. Melvin and J. R. Mohler on a "Dermal Mycosis Associated with Sarcoptic Mange in Horses"; it is illustrated. "Dehorning of Cattle" is treated by Dr. R. W. Hickmann. And besides all this which is of special veterinary interest, there are pages of miscellaneous information which deserve the attention of all engaged in live stock industry.

In closing, I wish to acknowledge the receipt of the "Second Annual Report of the Live Stock Sanitary Board of North Dakota," with the beautifully illustrated article of Doctor E. Van Ess, and his investigations in the preparations of mallein, tuberculin and Hog Cholera Serum.

From Doctor M. E. Knowles I have the pamphlets on "Arsenic in Vegetation Exposed to Smelter Smoke" and "Chronic Arsenical Poisoning of Herbivorous Animals."

Several circulars also came: From Pennsylvania on "Foot and Mouth Disease," from the Bureau on the same disease and on the "Test of Bruschetrinis's Hog Cholera Vaccine" and "Hog Cholera and Swine Plague Serum"; also, "Infectious Anemia in Horses," by Doctor J. R. Mohler.

Finally, the February issue of the *Agricultural Journal* of the Cape of Good Hope.

A. L.

CHICAGO IN SEPTEMBER.

We are only three months from the forty-sixth annual meeting of the American Veterinary Medical Association, to be held at Chicago the week beginning September 6th. Elsewhere in this issue of the REVIEW may be found a communication from Secretary Lyman giving an outline of the program, setting forth its main features together with other data of especial interest at this time.

There are a number of striking circumstances which augur well for the success of the forthcoming meeting. One of these is the fact that state, provincial and municipal veterinary organizations are taking steps to be officially represented. In many instances the delegates selected by the subsidiary bodies are not members of the A. V. M. A. This will afford these veterinarians an opportunity of taking part in the proceedings of our great international convention and doubtless will be the means of materially increasing the active membership. The enrollment of members is less than nine hundred, yet it is estimated that

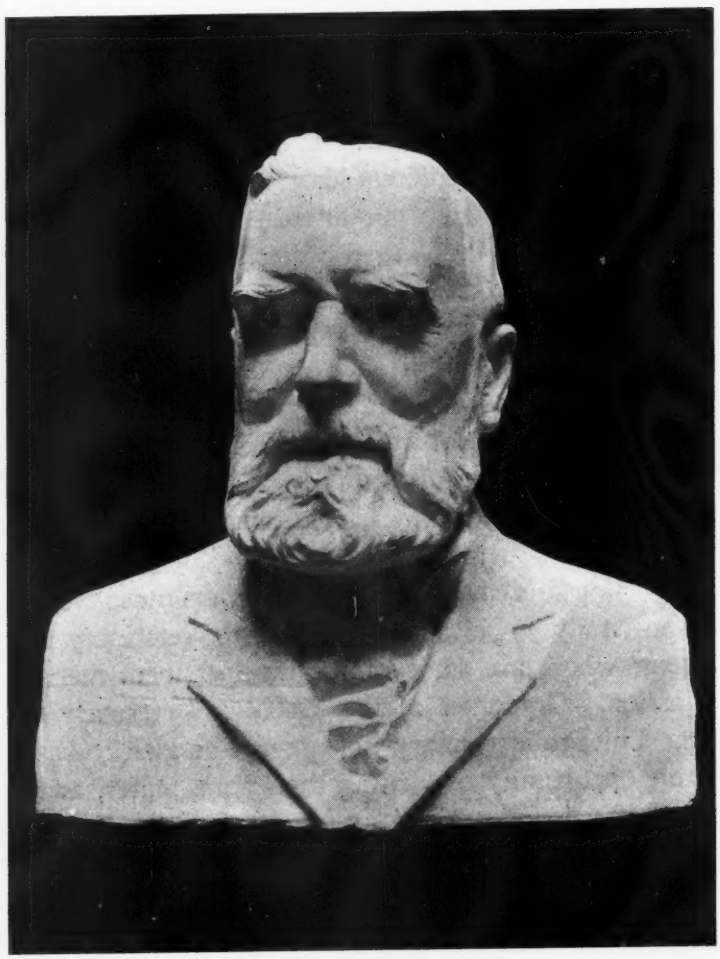
there are now nearly five thousand veterinarians practising on this continent who are eligible to membership in the A. V. M. A. This means that there are about four thousand American veterinarians who are not availing themselves of their highest professional privilege, to say nothing of the professional obligation they owe to the science by means of which the great majority of them gain a livelihood. However, to many the opportunity of their lives is only just now opening to their vision.

The action of the association in electing for president Dr. John G. Rutherford, a representative of the Canadian government, unites more intimately the interests of the veterinary profession of Canada and the United States. This will be magnificently demonstrated at Chicago.

Aside from its geographical, railroad and hotel advantages for a continental convention such as ours, Chicago possesses phenomenal attractions for the progressive, up-to-date veterinarian which are broadening to the careful observer, and that cannot be other than helpful to him in his own particular work. The immense live-stock markets, abattoirs, as well as the veterinary colleges with their splendid facilities for pathological exhibits and clinical demonstrations, all offer much for observation and study. Chicago has a large veterinary population, among whom are some of the most eminent members of the profession. Graduates of the McKillip Veterinary College and of the Chicago Veterinary College will be glad to have such a favorable opportunity of visiting their alma mater, and veterinarians educated and trained at other veterinary centres will be glad of the opportunity for inspecting conditions and methods at the Western metropolis.

Five years have elapsed since the death of Professor R. J. Withers, M. D., V. S., who, with Drs. Joseph Hughes and A. H. Baker, organized the Chicago Veterinary College in 1883, yet his memory is deeply cherished by the faculty and alumni of that progressive institution. We present herewith an illustration of the plaster cast of the bust of the late professor and president.

The cast will be in Chicago during the meeting of the A. V. M. A. for inspection by those who are interested in the work. It is proposed to have it reproduced in bronze and placed in a permanent position in the college.



The Inter-State Association of Live-Stock Sanitary Boards has changed its date of meeting to September 13, 14 and 15, so as not to conflict with the date of the A. V. M. A. meeting.

In accordance with a resolution adopted at the 1908 meeting of the Association of Veterinary Faculties and Examining

Boards of North America, the deliberations of that body will be divided into two sections, which are to hold preliminary meetings; one section representing the faculties and the other the examining boards. Dr. V. A. Moore has been named as chairman of the college faculties and Dr. M. H. Reynolds as chairman of the examining boards. Dr. Tait Butler, as president of the association, will preside over the deliberations of the general meeting. This affiliated body is rapidly assuming prominent importance in connection with the advance work of the parent organization—the A. V. M. A.

Some changes of supreme importance are contemplated in the A. V. M. A. program for this year. Changes which, if properly inaugurated and strictly adhered to, will ultimately be productive of inestimable good to the producer and the consumer alike of animal food products.

It is proposed to devote a session to "Milk Hygiene," from the economic and public health standpoints as well as from that of the live-stock interests, especially the dairyman's. The schedule outlined includes a prominent expert to discuss the subject from each point of view. The Committee on Diseases, it is expected, will occupy a session by presenting for study and discussion topics of vital importance and interest bearing upon sanitary problems confronting the profession. The report of the Committee on Intelligence and Education is being looked forward to with especial interest at this time since the U. S. Department of Agriculture is taking steps which are bound to lead to the advancement of the profession through the establishment of a broader as well as a higher standard of veterinary education in this country.

Problems confronting the general practitoner of veterinary medicine will be given a prominent place on the program, and while it is impossible in our editorial pages to go further into detail, we believe enough has been said to show that the makers of the Chicago program are determined that the 1909 convention shall occupy a most conspicuous place in the annals of veterinary progress on this continent.

ORIGINAL ARTICLES.

THE BIOLOGIST'S PART IN PRACTICAL PLANT AND ANIMAL BREEDING.*

By Dr. John W. Harshberger, Prof. of Biology and Zoology at the University of Pennsylvania.

The breeder's art has been practiced from the earliest times, since men began to domesticate animals. For the rules which were followed in ancient times we must look to the Latin and Greek classics where occasional reference is made to the methods of breeding used by the ancients. The Old Testament describes how Jacob took rods of green poplar and of the hazel and chestnut tree and removed the bark from the branches so as to give them a banded appearance. "And he set the rods which he had pulled before the flock in the gutters in the watering troughs when the flocks came to drink that they should conceive when they came to drink. And the flocks conceived before the rods, and brought forth cattle ring-streaked, speckled and spotted."

Each generation saw additions made to the breeder's code until quite a complicated series of rules based on actual practice were in force. But these rules varied with the experience of the various breeders and there was no harmony in practice, nor uniformity of opinion either as to the methods to be used or the results to be obtained by the use of this or that kind of mating and so it remained until the time of Charles Darwin, the great evolutionist, whose centenary we celebrated on February 12th of this year. Charles Darwin, tried to formulate the doctrines of the breeder's art, but he found the experience of breeders was inadequate to his purpose. He, however, collected the most important facts which he was able to secure by reading the works on the subject and by personal correspondence with the most re-

* Read before the Penn. State Veterinary Medical Association, Mar. 2-3, 1909.

nowned practitioners of animal and plant breeding. In the two volumes of his work entitled "Animals and Plants Under Domestication," he has embodied his observations and his generalizations upon this important subject and in several other of his books upon general biologic subjects, he has given us the experimental evidence upon which the breeder's art must be based. Darwin may be said, therefore, to have laid the scientific foundations of the breeder's art. Upon the foundation which he laid the subsequent superstructure has been built.

Many scientists have been at work upon the problems concerned in inheritance, cross-breeding, in-breeding, variation, adaptation, the origin of sex, determination of sex and similar questions of scientific interest. Great progress has been made by improvements of the microscope and of microscopic technique, and in a thousand and one ways the laws concerned in animal and plant breeding have been placed upon a sound scientific basis. The practical man no longer laughs at the efforts of that "scientific feller" whose work, if at all considered by him, was considered to be of no practical value. The animal and plant breeder have all to learn from the scientist and no man can practice the profession of a breeder successfully unless he is well grounded in the principles of the science of the breeder's art. The Pennsylvania Veterinary Medical Association has stood always for the proper education of the men who enter the profession and there is no more important subject which ought to be a part of the curriculum of the three years' course in the colleges of veterinary medicine than instruction in the science of the breeder's art. Not that every veterinarian will become a breeder, but a knowledge of what science has done in this field of investigation should be a part of the mental equipment of every Doctor of Veterinary Medicine. Incidentally, as many in this audience are aware, the speaker has endeavored in his lectures on biology to the veterinary students of the University of Pennsylvania to emphasize the important points concerned in animal and plant breeding. And it is with a feeling

of the value of the principles involved that he is here this evening to address this audience of practical men, as to the advisability of combining an acquaintance with the biologist's point of view with actual practice, so that scientific knowledge may be used as a check upon impossible or unprofitable kinds of breeding.

At the outset we should have clearly in mind the definitions of the terms used in a discussion of a subject. What do we mean by cross-breeding, in-breeding, hybridization and terms of like import. Cross-breeding is the mating of two individuals of different racial characters. All of the horses now on the British turf trace their ancestry in the direct male line to the Byerly Turk, the Darley Arabian and the Godeolphin barbar example of cross-breeding which may also be between horses of the same race but of different parentage. In-breeding is the mating of two individuals of the same parentage as sister and brother, mother and son, father and daughter.

Hybridization is the mating of two individuals of different species of kinds, and the offspring are known as hybrids. The most noted example is the breeding of the jackass and the mare with the production of a mule which is sterile, or the reciprocal cross of a stallion and a she-ass (jenny) with the production of a hinny.

Experiments in hybridization have been tried with the other species of the horse kind, genus equus. They are all so closely allied that each will, at least in a state of domestication or captivity breed with perfect freedom with any of the others. Cases of fertile unions are recorded between the horse and the quagga, the horse and Burchell's zebra (dauw), the horse and the Asiatic wild ass (henionous), the common ass and the zebra, the common ass and Burchell's zebra, the common ass and the Asiatic wild ass, the Asiatic wild ass and the zebra and the Asiatic wild ass and Burchell's zebra.

Darwin enunciated the principle "that nature abhors continuous self-fertilization." He has given us by his experiments

narrated in his book, "Cross and Self-Fertilization in the Vegetable Kingdom," some precise data tending to show the actual effect of cross-breeding and in-breeding for a great variety of species of plants. His most extensive series was made with the common morning glory (Ipomœa purpurea). This species was bred, both crossed and self-fertilized for ten generations. In every generation the crossed were larger than the self-fertilized, the average being as one hundred is to seventy-seven. Not only were they larger, but they were more productive. In another place Darwin writes that the gain in constitutional vigor, derived from an occasional cross between individuals of the same variety, but belonging to distinct families is from the first manifest. The consequences of close interbreeding carried on for too long a time, are as is generally believed, loss of size, constitutional vigor, and fertility, sometimes accompanied by a tendency to malformation. Yet in his experiments with the morning glories, and elsewhere in his published works, Darwin calls attention to facts that seem to be contrary to the principle above enunciated. In the sixth morning glory generation, there appeared a specially vigorous plant that overtopped its own competitors by half an inch and exceeded in height all but three of the series. Darwin named this plant "Hero" and remarks: "I was so much surprised at this fact that I resolved to ascertain whether this plant would transmit its powers of growth to its seedlings." Acordingly, he fertilized a number of flowers of "Hero" with their own pollen and planted seedlings in competition with inbred plants and with the cross-bred as well. The results obtained showed that "Hero" and its descendants have varied from the common type not only in acquiring great power of growth and increased fertility when subjected to self-fertilization, but in not profiting from a cross with a distinct stock. Although Darwin was surprised at Hero and its descendants, we know now, however, that there are many hundreds of plants which possess cleistogamous flowers which are habitually self-pollinated without any apparent diminution in vigor, or hardi-

ness, as for example, our common blue violet which produces more seed underground than on the parts of the plant above the surface of the soil.

In another place, Darwin records the experience of animal breeders with regard to this question of close inbreeding for he says: "With cattle there can be no doubt that extremely close interbreeding may be long carried on, advantageously, with respect to external characters and with no manifestly apparent evil as far as constitution is concerned." Yet Darwin tries to shape these results to fit his views as the following quotation will show: "But the Shorthorns offer the most striking case of close interbreeding; for instance, the famous bull Favorite was matched with his own daughter, granddaughter and great-granddaughter, so that the produce of this last union, or the great-great-granddaughter, had 15/16th or 93.75 per cent. of the blood of Favorite in her veins. This cow was matched with the bull Wellington having 62.5 per cent. of Favorite blood in his veins, and produced Clarissa; Clarissa was matched with the bull Lancaster, having 68.75 of the same blood, and she yielded valuable offspring. Nevertheless, Collings, who reared these animals, and was a strong advocate for close breeding, once crossed his stock with a Galloway, and the cows from this cross realized the highest prices."

All of the recent breeding work has shown that inbreeding is not detrimental, but is a powerful means of improving a race of animals provided the breeder selects the animals to be bred with regard to constitutional vigor and fertility.

The general principle that must decide the method of breeding depends upon whether the breeder desires to improve his herd, to improve the breed or variety as a whole or to originate new varieties. The first method is the one which should be adopted by the ordinary farmer, or herdsman, because all kinds of breeding are costly, whenever the purpose is to produce something better than before. Grading, therefore, is the best practice where the commercial end of breeding is kept in view. By

grading is meant the mating of a common or relatively unimproved parent with one that is more highly improved. One pure-bred bull with a herd of twenty cows can give all the calves in the herd a pure-bred sire (that is, make them half-blood).

Expressed in terms of money, it is possible to give all the calves in a herd a pure-bred sire at a cost of about two dollars per calf. This plan has been adopted in New Jersey for the improvement of the horses in the State. Recently there have been imported from abroad twenty stallions and when the breeding power of these stallions has been tested, they will be distributed throughout the state, so that they can be used for breeding purposes by farmers and others interested in the improvement of their horseflesh.

Crossing of the ancestral lines of two distinct races is designed to blend or secure a fortuitous combination of characters. This form of breeding is adapted to the production of new strains, if Mendel's law is not operative. Mendel's law may be formulated as follows: Differentiating characters reappear in their purity and in mathematical regularity in the second and succeeding hybrid offspring; the mathematical law is that each character separates in each of these generations in one-fouth of the progeny and therefore remains true. In concise figures it is expressed as follows: 1 D: 2 D R: 1 R: 1 D and 1 R come true, but D R breaks up again into dominants and recessives in the ratio of 3 to 1. Castle, who addressed this society last year, discovered that this law holds good in the mating of guinea pigs and it has been found to hold good with the crossing of other small animals and in plants, especially the pea with which Mendel first experimented. The value of Mendel's law is that it gives to the plant and animal breeder an indication before mating of the character of the offspring which may be expected to be born, if such paired individuals Mendelize, and it indicates a method by which pure-bred types may be obtained. In this respect the discovery of Mendel may be said to mark an era in the breeder's art.

After this digression we will return to the question of Cross *versus* Close-breeding. There are two kinds of close breeding recognized by animal breeders, viz.: Line-breeding and in-breeding. Line-breeding is the restriction of selection and mating to the individuals of a single line of descent. By this method is secured a real breed improvement, for by it every animal is excluded outside of the approved and chosen line. This keeps the pedigree pure, because variability is discouraged and rapidly reduced to a minimum. The results to be obtained in line breeding can almost certainly be predicted.

Pronounced results are obtained if we follow judicious breeding of this sort, because it is strengthened by the simplicity and strength of the ancestry which if the selection has been good all pulls in the same direction. Prof. Davenport* believes that no other system of breeding has ever secured the results that line breeding has secured, and if the present state of knowledge is reasonably sound, no other system will ever be so powerful in getting the best possible out of a given breed, or variety, especially of animals. The only requirement is not to abandon individual selection.

In-breeding is line-breeding carried to its limits, because it involves the mating of individuals closely related, such as sire and offspring, or of dam and offspring, or of brother and sister. Breeding the sire and his daughter gives rise to offspring three-fourths of whose blood are those of the sire, which if followed up practically eliminates the blood of the dam. Breeding the dam to her own son or sons successively increases the blood in the offspring of the female side. Breeding together of brother and sister is a form of in-breeding which preserves the blood of both sire and dam in equal proportions. It is inferior to either of the others, as a means of strengthening the blood lines. Among plants there are two kinds of in-breeding, namely:

1. That in which the fertilization is with pollen from another flower on the same plant; 2. That in which fertilization is by pollen of the same flower.

*Davenport, Eugene. Principles of Breeding, 1907, 612.

The advantages of in-breeding are evident when we consider that an in-bred animal is enormously prepotent over everything else. Its half of ancestry being largely of identical blood, is almost certain to dominate the offspring. It is the strongest of all kinds of breeding and it gives rise to the simplest of pedigrees. Another advantage is that successful associations of characters are preserved intact and not diluted by the infusion of new strains. The disadvantages are that this method of intensifying characters affects all the characters, bad as well as good. It has been followed by the most successful results and the most dismal failures.

Let us look at the modern methods of the plant breeders, as Burbank and Nilsson, before we consider the laws which determine the sex of animals. Darwin held that the production of species was by slow changes and he took his arguments mainly from a consideration of the agricultural side. De Vries showed by experiments with the evening primrose that it is possible to repeat and control the origin of horticultural and analogous varieties under strict experimental precautions and that the full proof may be given that they originate at once by mutation, and not by a slow process of chance. German plant breeders assumed, as a rule, that they produce their races at will and by a process of slow variability and repeated selection. Upon their experience Darwin based much of his reasoning. This German method has been subject to severe criticism by Dr. Nilsson, director of the Swedish agricultural experiment station at Soalöf. According to his experiments, changes occur in agricultural plants as suddenly as in horticultural species, so that the principle of mutation is conducive to the assumption of distinct units in the characters of plants and animals. Nilsson discovered accidentally a few cultures that were uniform and bore only one type among thousands that were heterogeneous.

To this accidental discovery combined with the exact scientific method of keeping extensive records we owe the following propositions according to De Vries. Ordinary varieties of ce-

reals are built up of hundreds of elementary forms which with a few exceptions, have hitherto escaped observation. They may be distinguished by distinct marks derived from their botanic characters. They have to be selected but once and afterward will be quite uniform and constant, with the exception of accidental hybrids which, however, will also yield constant and pure races after repeated selection. The purity of the races is such as to be practically absolute, but this does not exclude the occurrence of stray mutations by which new and valuable improvements may be secured. The high variability which is commonly attributed to our ordinary varieties of cereals consists only in the differences among these constituents of the mixtures. But these differences have been found by Nilsson to be so great as to afford material for all the climates and soils of Sweden. Willet M. Hays pursued a somewhat similar method of plant-breeding in Minnesota; for he found that in one thousand plants of wheat a few phenomenal yielders and by a method of single seed planting he found it practicable to secure these exceptional plants and from these new wheat varieties were made.

Recently Cyril G. Hopkins has discovered a somewhat similar method applicable to the improvement of the corn plant. Corn is selected in the field. Early in the fall, shortly before the time of harvesting, the farmer should go through his fields and mark the stalks of superior quality. At the time of husking the ears of the marked stalks are preserved carefully and kept as seed corn to be tested separately in experimental plots. The real selection is made the next year by the comparison of the progeny of the chosen ears. All such selection is based on performance since the aim of the work is the improvement of the hereditary qualities, and this selection is conducted in breeding plots. The best ears of the breeding plots are divided into two lots, the very best which is destined for the breeding plot of next year, and the other for the multiplying or increase field, where it is grown as seed corn for the commercial fields of the farm.

Burbank's method of plant-breeding rests on somewhat similar principles. He hybridizes various forms to increase their variability and then selects a chance sport as the starting point for a new variety, or race. His method is to grow hundreds of thousands of plants and select one or two out of this number of exceptional merit and destroy the rest of the plants. So that in a few years he produces results which it takes European breeders many decades to accomplish, because they cultivate a relatively small number of plants for selection.

Before considering the question of how sex is determined, preference must be made to a few matters of cytologic interest by way of introducing the discussion which follows:

When the maturation of an egg takes place in all cases the essential phenomena are the same. Two minute cells are formed, one after the other, near the upper, or animal pole of the ovum and in many cases the first of these divides into two as the second is formed. A group of four cells thus arises, namely, the mature egg, which gives rise to the embryo and three small cells or polar bodies which take no part in further development. The egg is now ready for the sperm and as the number of chromosomes is reduced by one-half, the preceding changes are called the reduction divisions. Reduction in the male takes place in the grandmother cell of the sperm so that the chromosomes of the male cell are reduced also to one-half the number in the animal body cells. When the egg cell and the sperm cell unite, the number of chromosomes is restored in the resulting cell or zygote to the usual number found in the animal's body and with this number the cell divisions take place leading through the embryonic condition to the adult form of the organism.

Having explained the cytologic changes involved in ordinary fertilization, we can understand better the problems concerned in a discussion of how sex is determined. Despite the technical difficulties, progress has been made in sex determination. The following questions arise: Is the germ of the original indeterminate sex determined later by external conditions? It has been

generally held that climate and food together with prenatal impressions have had their influence in determining whether an animal or plant shall be male or female. Or given identify in externals is it predetermined to be male or female? If such predetermination exists what is its physical basis?

The experiments of Marchals with dioecious mosses prove that the non-sexual spores, though similar in appearance, are individually predestined as male-producing and female-producing; and all efforts to alter this predestination by changes in the conditions of nutrition, such as are known to be effective in the case of fern prothallia, failed to produce the least effect. The remarkable results obtained by Correns with dioecious flowering plants, such as the common bryony (Bryonia dioica) prove that the pollen grains, though apparently alike morphologically, are predestined in equal numbers as male-producing and female producing. Half the pollen grains upon fertilizing the eggs produce males and half females.

Cytologic studies on insects, myriopods and arachnids have demonstrated that in many of these forms a sexual predestination is clearly shown in the nucleus of the spermatozoa and in particular in the constitution of the chromosome groups. In all of the species studied half of the spermatozoa are characterized by the presence of a special nuclear element called the X-element, while the other half fail to receive this element. The X-element is a single chromosome, called by some the accessory chromosome, in Hemiptera, Orthoptera, Collopteria, Odonata, Myriapoda, Arachnida. It has no synaptic mate or partner, and therefore, in maturation divisions it passes into one one-half of the spermatozoa. In some cases, it has a synaptic mate, the Y-element. In maturation one pair receives the X-element and one the Y-element, as the following diagrams and table after E. B. Wilson will indicate to those who have followed my argument.

(*a*) In the absence of a Y-element. Diagram II.: Egg X spermatozoon X zygote XX (female). Egg X spermatozoon no X zygote X (male.)

(*b*) In the presence of a Y-element. Diagram I.: Egg X spermatozoon X zygote (female). Egg X spermatozoon y zygote X y (male).

These discoveries seem to open up wide possibilities, but our present state of knowledge is insufficient to absolutely affirm that sex is determined in all animals and plants in the manner above outlined. Nutrition seems also to play an important role for according to Young sex in tadpoles remains a long time indeterminate, and during this time the amount of food exerts a controlling influence upon their sex. In the lower mammals, as far as has been determined without the cytologic questions having been studied, temperature and nutrition seem to be controlling factors, and when such is the case it is remarkable that in every instance the production of females seems to accompany the more favorable conditions and that of the males the harder, or less favorable.

In this paper, I have endeavored to show that the practical plant and animal breeder cannot neglect to encourage the biologist in his pursuit of pure scientific investigation; because some of the apparently least practical research work may prove ultimately to be of the highest practical value.

Who among the older veterinary surgeons not familiar with the modern spirit of investigation would ever have suspected that a mere study of the small nuclear bodies of animals and plants by means of the microscope would be found to have application to the problems which perplex the common every-day plant and animal breeder. Yet the past few years have demonstrated time and time again that there is no investigation, however abstruse and intricate, but what may have the utmost value in assisting the practical man to understand the fundamental principles upon which the art which he has pursued for a lifetime is based.

We have just three months left to get ready for the Chicago meeting of the A. V. M. A.

REPORT ON THE ANIMAL INDUSTRY OF INDO-CHINA*.

By Charles G. Thomson, D. V. M.

In accordance with your instructions of January 8, 1908, I proceeded via Hongkong to Saigon, Indo-China, arriving there January 22. I presented my letters from His Excellency the Governor-General of the Philippine Islands to the Governor-General of Indo-China. His Excellency expressed the cordial attitude of the government of Indo-China toward the Government of the Philippine Islands and his desire to co-operate in the furtherance of commercial relations between the two countries. He was deeply interested in the subject in hand and said that any suggestions this Government might offer as to quarantine and veterinary inspection of animals destined for Manila would be executed if practicable.

Exportation of Cattle and Carabaos.

Cattle and carabaos abound in such numbers in Indo-China as to render their market price far below their value in the Philippine Islands and other near-by countries. Exportation to the Philippine Islands is therefore quite profitable, but the shipment here of thousands of cattle during the past year has aroused the authorities and the European population to the necessity of retaining the greater part of their best animals. This sentiment is easily understood when one considers the immense agricultural development of the country and the consequent demand for cattle and carabaos; the increase in the market price of these animals, both for labor and food purposes; and the fact that the French are not realizing any profit from the industry.

Only foreigners have so far engaged in the business of exporting live stock from Indo-China. The people engaged in this business must surmount many difficulties. The cattle centres are

*The Philippine Agricultural Review. V. 1, NO. 5. 1908

some distance from the ports, so the buyers must proceed inland buying up cattle in small bunches, two here and three there, until a herd has been gathered of sufficient size to warrant the chartering of a steamer. The natives will not accept bank notes, so silver coin must be carried inland by pack horses. There are no facilities for transportation in those mountainous districts from which cattle are obtained for export. The animals must be driven overland to the ports and fires have to be built at night to protect them from tigers and leopards, which abound in Indo-China. And then, too, the suspicious attitude of the natives toward foreigners and their slow methods of transacting business are factors of considerable annoyance.

The men engaged in the business of exporting cattle from Indo-China all desire the maintenance of a quarantine in that country, if only for their own protection. Most of the animals destined for Manila are kept in corrals for some few days before shipment, awaiting the arrival of other animals from more remote districts and the coming of the steamer on which they are to be shipped, but are not subject to veterinary inspection at the presnt time.

Classes of Live Stock in Indo-China.

Horses.—The native horse of this country is a pony resembling in some respects the Filipino pony. Some of them are larger, but of a coarse type, showing their relation to the Chinese horse. They are comparatively few in numbers, and are supplanted by the jinrikisha coolies as a means of transportation.

Cattle.—Most of the cattle in Indo-China are of the kind known in Manila as "Saigon" cattle. They are of good beef type, but small. In their natural environment they present a far better appearance than that observed in Manila, carrying much more flesh. They are possessed of wonderful grazing ability and use their pasturage of sparse grass, young bamboo, and wild green stuffs to splendid advantage. The natural grasses of Indo-China are not superior to, nor more abundant than those in the Philippine Islands.

Cattle raising up to this time has received but little attention from the European inhabitants of Indo-China, but many inquiries on the subject have stimulated interest and a number of Frenchmen have intimated their intention of soon engaging in the cattle business.

The centres of greatest cattle breeding are in the hills of southern Annam and in Cambodia, where the animals run at large, unattended. The number of cattle in Cambodia is estimated at 350,000, in Annam over 1,250,000, and in Tonkin about 1,000,000.

The market value of cattle varies somewhat in different provinces and sections, the average being from P12 to P20 (piastres). In some sections cattle are so numerous that in the absence of a ready market they are practically without value. The Governor of Faifo stated that the natives in that section often kill cattle for their hides alone.

Carabaos.—In size and conformation the carabaos of Indo-China are about identical with those of the Philippine Islands. The carabaos, being stronger, are of more value than cattle in rice cultivation. The natives take more pride in them and place more value on them than on any other domestic animal. This preference of the natives, and the fact that carabaos are less hardy and more difficult to breed, tend constantly to raise the market value. At the present time prices range from P20 to P45.

Hogs.—The hogs of Indo-China are of a far better kind than those native to the Philippine Islands. As a flesh type they are splendid, being of compact conformation, straight-backed, heavy-loined, and with big hams. The hollow-backed, sway-bellied type so common in the Philippine Islands is not numerous in Indo-China.

The hog industry is considerably developed, as swine of any size and in good condition find a ready market at home or in Hongkong. The average price of hogs as quoted to me is

P10 to P18. The natives appreciate the response of the hog to generous feeding and before marketing feed them with rice and other available food stuffs.

Sheep and Goats.—There are some few sheep in Annam, but I had no opportunity of observing them.

There are very few goats in Indo-China, the types there being about the same as those in the Philippine Islands.

Laws Relative to Live Stock.

The provinces of Cambodia, Annam and Tonkin have no registration of cattle and no taxation. Cochin-China has a system of registration. Some changes in the laws relating to the exportation of live stock, especially of carabaos and cattle, have been under consideration the past year, during which time considerable inroads have been made on the number of cattle in Indo-China by exportation to the Philippine Islands and Hongkong. The laws, as they stand now, prohibit only the exportation of female animals, but a measure recently passed and sent to France for confirmation will prohibit the exportation of all animals under five years of age.

However, the lack of registration in those provinces from which cattle are shipped to the Philippine Islands will render the enforcement of this law nearly impossible. A statute limiting the number of cattle to be exported to 10,000 annually is now under consideration. The province of Cochin-China has prohibited the exportation of any cattle or carabaos, as the retention of all these animals is deemed necessary in that province because of the immense agricultural development and the large demand for cattle for local consumption.

Veterinary Sanitary Laws.

The French law of 1881 applies to Indo-China, being amended to include certain tropical diseases existing in that country but not in France. These laws provide for a rigid quarantine around districts known to have been affected, the quaran-

tine to be maintained until the veterinarian in charge releases the animals, or until one month elapses from the date of last evidence of infection.

Animals suffering from, or having been exposed to, rinderpest or certain of the other dangerous diseases, are slaughtered, the owners being allowed an indemnity of three-fourths the value of the animals killed.

The veterinarian suggests to the provincial authorities any additional quarantine provisions deemed necessary. The suggestions are made ordinances and rigidly enforced.

Veterinary Service.

The veterinary service is well organized and distributed, consisting of twenty-four men who are stationed in the so-called sanitary districts, as follows:

Cambodia.—Pnom Penh (2), Prey Kompong (Cochin-China), Saigon (2), three auxiliaries.

Annam.—Than Hoi, Hue, Nha Trang, Qui Nhon, An Khe.

Tonkin.—Hanoi (4), Haipong, Phu-lang Thuang, Nuoc Hai, Thai-Nguyen, Thuyen-Quang, Yen Bag, Nin Binh.

M. Lepinte, is the chief.

The veterinarians are responsible for the sanitary condition of their respective provinces and must control any outbreaks of infectious disease that may develop. They superintend the zoötechnic institution of their province and inspect at the abattoir daily. Each has a corps of competent assistants and is provided with a laboratory containing the necessary bacteriological apparatus. They are well paid, receiving an average of about $1,800 (United States currency) per annum. In addition each is provided with a house at his permanent station and with horses or coolies for local transportation.

Upon retirement from the service they receive a pension from the Government, the amount being proportionate to the length of time in the service. When called from a permanent station to more remote districts in the provinces they are given every available facility for transportation.

Veterinary College for Natives.

In 1904 the construction of the buildings was begun, being completed in all essential details in 1905. The college is located in the city of Hanoi, the capital and most important of the cities of Tonkin. Its location in Hanoi commands a ready supply of all the domestic animals for clinical and experimental observation.

This college is for the natives (Annamites) only. At present there are some thirty students at the college, these men having been selected from the native high schools for their adeptness in studies and especially for their proficiency in the French language. The government pays the students about P15 a month while at college, this sum being sufficient to support them. The payment of this monthly salary renders it possible for even the poorest boy to study there, if he maintains a sufficiently high average while in the high school to warrant his appointment. This necessarily stimulates scholarship in the lower schools and secures ambitious young men for the college.

On graduation the Annamites are stationed in the provinces where each must, first, keep closely in touch with the sanitary conditions in his district; second, must deal promptly by quarantine measures and use of serums with any diseases of infectious nature that may develop; third, must respond to calls upon his services made by the inhabitants who possess sick or injured animals. They are not entitled to fees from the natives for these services, but are paid 700 pesos (piastres) annually by the Government of the Province of Tonkin. They are furnished by the Government with serums, medicines and necessary instruments. The first graduating class leaves college this year. The authorities anticipate highly efficient services from them, because, being natives, they can easily gain the confidence of the people in those measures and inoculations deemed necessary against infectious disease, and by mingling with the natives can quickly discover any outbreaks of disease that may occur. (It is interesting to note that the French authorities and veterinary corps have ex-

perienced the same difficulties which have been met in the Philippine Islands, in obtaining information of outbreaks of disease before the infection has become widespread.) The reduction in salary average of the veterinary corps will be considerable.

The main building is the study hall, in dimensions about 30 by 100 feet. It is divided into three halls, one for each of the three classes, each hall containing a library, and the other things necessary at its particular period of study. Adjoining this building on the left is the hospital for horses, mules, cattle and other large animals which may be entered at the clinic. This building contains about ten large, well-ventilated stables with slightly inclined asphalt floor permitting of good drainage, and measures about 18 by 60 feet. Adjoining this is the clinic, containing the operating room, which is not complete in detail as yet, and the dispensary, in which the students themselves compound all prescriptions. In this building there are, also, the pens for dogs, cats and other small animals which may be entered for observation. These pens are uniform iron-barred cages, measuring about five feet square and high. There is near by a small shed wherein the small experimental animals (guinea pigs, rabbits and rats), are bred and kept. Each department is supplied with instruments, apparatus and specimens necessary for its particular branch of study and work.

All of these buildings are constructed of brick and faced with concrete, presenting an appearance of solid granite. They are arranged in the form of a capital "E" inclosing an open court, sodded with grass, where convalescents are allowed to graze. The entire grounds and buildings are surrounded by a high concrete fence, and as a whole present a most cleanly and fresh appearance.

The staff of instructors comprises three veterinarians and two physicians. They are all government men and are specialists in the subjects which they teach. The actual clinical work is in charge of the military veterinarian who is stationed at Hanoi. He is an exceedingly practical veterinarian because of the nature of his duties.

The students must devote three years to college work. The first year study embraces anatomy, physiology, and the other basic subjects. Much time is spent in actual dissections of the horse and other domestic animals. The second-year work includes materia medica, therapeutics, surgery, pathology, bacteriology, and the methods of handling the specific infectious diseases. The work in the third year is devoted to much practical work, in the clinic as well as to a deeper study of all the veterinary subjects. The various courses are demonstrated by means of text-books, lectures, papier-maché models, and charts, up-to-date apparatuses being supplied for the pursuit of the advanced studies. Throughout the course special stress is laid upon the subject of infectious diseases and the methods of handling outbreaks, and considerable attention is devoted to parasitism. The third-year men have all obtained a splendid grasp of veterinary science and, in clinic, manifest a pronounced enthusiasm in their work.

When I visited the college (February 15 and 16), the hospital was filled with patients suffering from the various diseases common to domestic animals. These animals had all been submitted for treatment by their owners in Hanoi. A nominal charge is made by the college authorities for the subsistence of animals, the medicine and attendance being free.

It is impossible, at the present time, to furnish an estimate of the cost of construction and maintenance of the college, but these figures will soon be at hand, as Monsieur Brenier, subdirector of Agriculture and Commerce, is sending the annual budget of the province of Tonkin, which should arrive about the 25th instant. However, this estimate will be misleading, as labor and materials of construction are considerably cheaper in Indo-China than in the Philippine Islands.

Diseases Prevalent.

Rinderpest.—Rinderpest has existed in Indo-China since 1896. In 1899 very severe losses were caused by a widespread outbreak. In recent years the disease has never been so wide-

spread nor so virulent as to cause any considerable anxiety, it being confined almost entirely to Tonkin and existing there only in isolated outbreaks.

The virulence of rinderpest as observed in Indo-China varies in the different sections, but nowhere is it as high as in the Philippine Islands. The outbreaks in the northern part of Tonkin have been the most virulent, the mortality being about 50 to 65 per cent. in cattle and 80 to 90 per cent. in carabaos. In southern Annam the mortality ranges from 15 to 25 per cent. in cattle and 40 per cent. in carabaos. In Cambodia and Cochin-China it is seldom identified. Phuyen, from which large numbers of cattle have been shipped to Manila, has never been subjected to rinderpest, as it is inclosed by a chain of high mountains effectually shutting off all intercourse with the surrounding districts which have from time to time been infected.

In combination with other diseases rinderpest presents a much more formidable mortality. It is occasionally observed with surra and septicæmia hæmorrhagica.

Surra.—Surra has been observed in Indo-China for some years and in all respects is similar to that encountered in the Philippine Islands. The disease is most prevalent in Cambodia.

Anthrax.—Anthrax is almost unknown in Indo-China, no serious outbreaks having been observed there during the occupation of the French. A few isolated cases have been identified from time to time by Dr. Yersin, of the Pasteur Institute.

Symptomatic Anthrax (*blackleg*).—This disease has been identified by Drs. Yersin and Vassal, the latter having observed about fifty cases in some five years.

Foot-and-mouth Disease.—This was identified in 1899, but in later years has not been observed.

Texas Fever.—Nearly all of the cattle of Indo-China carry the cattle tick and, like the cattle of the Philippine Islands, are immune to Texas fever.

Glanders.—This disease exists in Indo-China, but has never constituted a serious menace to the colony. The positive diagnosis of glanders is followed by the immediate slaughter of the infected animal.

Dourine.—Dourine exists in Indo-China, being especially common in Cambodia. There is an outbreak there at the present time, so any horses coming from that district should be carefully examined, if admitted into the Philippine Islands.

Tuberculosis.—Abattoir records show that tuberculosis exists among the cattle of Indo-China, about two-tenths of one per cent. showing lesions on post-mortem.

Rabies.—This disease is very common among dogs in Indo-China.

Serums Used.

Anti-rinderpest.—Anti-rinderpest serum is manufactured at Nha Trang by the Pasteur Institute, a branch of the Paris establishment. It is a private institution, the output of the serum laboratory being contracted for by the government. The peritoneal-wash method of Adilby, of Constantinople, is used in the preparation of anti-rinderpest serum. It is impossible to pass upon the efficiency of this serum in comparison with that manufactured in Manila, as I had no opportunity to compare equal inoculations of the two.

The dose of their serum is 20 cubic centimeters and the immunity given is for but three weeks. The cost of the serum to the government as quoted to me is about P1 per dose of 20 cubic centimeters, which is about double the cost of that prepared in Manila. This in spite of the fact that animals for serum purposes can be purchased fully 100 per cent. cheaper in Indo-China than in the Philippine Islands. There are 700 serum animals at Nha Trang, from which 200 liters of serum are prepared per month.

Anti-septicæmia Hæmorrhagica.—This serum is also prepared at Nha Trang. The process is long drawn out and the

serum when prepared is not very efficient in giving even a short immunity against the disease. In preparation, the serum animals are inoculated with 1 cubic centimeter of virus simultaneously with 20 cubic centimeters of serum, this inoculation being preceded two days by an inoculation of 20 cubic centimeters of serum.

The virus is a culture from agar slant diluted ten times with sterile water and is very strong. If given alone it would cause the death of the animal in from twenty to thirty-six hours. The day following the inoculation the temperature of the animal usually rises to 40+°C. but recedes to normal the next day thereafter. After two weeks the same inoculation of virus is repeated and is usually followed by a light reaction. Following this at intervals of two weeks injections of 5, 10, 15, 50, 100 and 200 cubic centimeters of virus are given. The animals are then bled when their condition warrants. This extended process of immunization is necessary in the preparation of this serum as the virus is strong, resistance weak, and hastening the process results in decided emaciation of the animals.

Phlebotomy is resorted to in drawing blood from anti-septicæmia hæmorrhagica serum animals. Two liters only are taken at one bleeding. The blood is allowed to coagulate in a cool place and the serum is not sterilized, but bottled when poured off. Cylindrical earthen jars of 2 liters capacity are used to contain the blood. A perforated metal plate is adjusted at the top of each jar and is allowed to sink when the clot is forming, so as to press out all of the fluid possible.

Danger of Importing Disease from Indo-China Into the Philippines.

Importations from Indo-China to date have been, with two or three exceptions, singularly free from rinderpest and other infectious diseases, and conditions in that country are such as to warrant the prediction that future importations will carry as little, if not less, disease.

It has already been mentioned that but little rinderpest exists in Indo-China at the present time, and that those outbreaks occurring are of low virulence and so isolated as to be very easily placed under control. It has also been pointed out that those districts from which the most of our cattle are obtained (and from which they must always come), are especially free from the infectious diseases.

These conditions, together with the protection afforded by the well organized and equipped veterinary service and the laws prohibiting exportation from districts known to have been recently infected with rinderpest or other diseases of infectious nature, are of deep significance in the question of obtaining healthy animals from foreign countries for the Philippine Islands.

If advantage is taken of the proposition of the Governor-General of Indo-China to provide ample quarantine facilities and veterinary inspection before embarkation of animals destined for the Philippine Islands, importations from that country should be almost, if not entirely, free from infectious diseases.

Zoötechnic Work and Results.

The Zoötechnic Institution was established about twenty years ago, but only during the last ten years have any determined efforts been made in this work.

The institution is under the direction of the Bureau of Agriculture, through its chief veterinarian. The main station is at Hanoi. This establishment is the most complete institution of its kind that I have ever seen. It is composed of twelve buildings constructed of brick and faced with concrete, distributed over the 40 hectares of land belonging to that station.

Beside the principal station at Hanoi there are numerous other stations at various important cities of Indo-China, but these are not so large or so well improved. An annual appropriation of about P200,000 is provided by the general budget for carrying on the zoötechnic work and special appropriations are made for importations.

Horses.—The main object of the institution is the improvement and increase of the Indo-China horse, and with this pur-

pose in view over 700 sires and dams have been imported from Russia, Australia, France, Germany, Spain and England. At the present time there are about 200 of these imported animals at Hanoi.

The French authorities in their efforts to produce better horses by crossing with the native stock have proceeded along different lines from those followed in the Philippine Islands. In addition to importing sires and breeding to the native mare they have also imported mares and used the native sire. The results have been good, as the foals from the large mares have been uniformly large and sturdy. However, it is problematical if this course is wise. The imported mares can produce but one foal a year each, while on the other hand the same amount of money expended in importing sires would have resulted in probably fifteen times the number of offspring.

The government of Indo-China offers every inducement to the inhabitants for the use of selected sires deemed best. There are some sixty sires distributed throughout the country and maintained solely for service of animals belonging to the natives. The government pays P4 to the owner of every native dam that drops a foal by a government sire; this as an inducement for the use of the sire. Or the government will import mares and sell to any responsible person for 60 per cent. of their cost, landed. For the first foal dropped the government pays 30 per cent. of the original cost of the dam, and for the second, third and fourth 20 per cent. each, the owner of the dam retaining the foals.

In three years, if three foals have been dropped, the possessor of the mare has been paid by the government almost the original cost to him and yet has the four animals.

The government reserves the right to purchase any winners at the race tracks desired for the stud, and fixes a maximum value of P500 for this purpose. I mention this to show that the government of Indo-China is sparing no expense in their efforts to improve the native stock of the colony.

Cattle.—The government appreciates the significance of the cattle industry in the commercial economy of Indo-China and

has endeavored to give it impetus at different times and to emphasize the advantage of improved methods of handling and breeding. There is ordinarily no systematic breeding or selection of sires and dams, the animals being simply allowed to graze and increase by natural selection.

Expositions of live stock are held from time to time at Hanoi, Phuyen, Phnom Penh, and other places, at which the best native cattle are exhibited, along with imported animals of good beef and dairy breeds.

Some efforts have been made to introduce dairy cows from France into Indo-China, but without success. The offspring obtained by crossing these dairy animals with native cattle has reverted into the beef type. Other experiments along the dairy line have not been successful. Improvements in the beef type have been attempted and have met with some success. The results obtained by the use of imported Indian sires have been the best to date.

Sheep.—Attempts to introduce imported sheep into Indo-China have met with decided failure until within recent months, when sheep were brought from the Malay Peninsula which, up to this time, have been doing well and breeding rapidly.

Hogs.—Not much has been done in the improvement of hogs, the native stock being of so good a type that much improvement is not necessary and efforts therefore have been directed along other lines.

In concluding this report, I wish to express my appreciation of the courteous reception and assistance extended to me by His Excellency Governor-General Beau, Mr. Capus (Director of Agriculture), Mr. Brenier (Subdirector of Agriculture), and Mr. Lepinte (Chief Veterinarian), and especially I wish to mention the kindly interest and assistance afforded me by Mr. Connor, United States Consul at Saigon, and Drs. Schein and Vassal, of the Pasteur Institute at Nha Trang. The efforts of these gentlemen were of invaluable help to me in the performance of this mission.

INFECTIOUS DISEASES FOLLOWING BENCH SHOWS.

By J. McI. Phillips and L. P. Garrahan.

From the Pathological Laboratories of the Ohio State University.

Every bench show is followed by an outbreak of canine distemper among the animals exhibited, and often among the dogs in the kennels to which the show dogs have been returned. As a general rule the larger the show the greater is the proportionate number of dogs that become sick. When a circuit of shows is so arranged that one show follows another, and many of the dogs are exhibited at all of them, the number of cases of distemper which follow in its wake is very great.

Most dog shows are of from three to four days' duration. The American Kennel Club, the governing body for dog shows, very wisely prohibits shows of longer duration. It also forbids the exhibition of dogs less than six months of age, and provides that all dogs younger than one year can be removed from any show after their judging, which must be completed by the end of the second day. No show can be held under the auspices of the American Kennel Club unless one or more qualified veterinarians are in charge of the health of the dogs. The veterinarian must examine all dogs as they arrive, and exclude those suffering from contagious diseases. He must inspect the dogs daily, and have all developing contagious diseases removed from the show at once. Even though the veterinarian is a competent man and performs his duties in the most conscientious way, the usual train of death follows the show.

We believe that there are two forms of disease in dogs which are commonly called canine distemper. We have never seen an outbreak of the disease described in the textbooks as "bench show distemper," and from our experience believe that these cases are simply milder cases of distemper.

The true distemper characterized by its protean types is perfectly familiar to most veterinarians.

The other disease is called by some German veterinarians "dog plague," or "Stuttgart dog plague." This may be only another form of distemper, but it seems to differ in some very important clinical characteristics, so that until an exact bacteriological diagnosis can be made, we think it is justifiable to class it as a separate disease. Older dogs are more commonly attacked than in distemper. It is characterized by its short period of incubation—one to three days. It begins as an intense gastroenteritis, which may or may not be accompanied by an *intermittent* fever. The temperature may be subnormal. Diarrhœa black, bloody, or clay-colored, is always present. In some cases constipation marks the beginning of the attack. Fifteen or twenty stools in a day are not uncommon, and they are usually accompanied by tenesmus. The insertion of a thermometer into the rectum causes much pain. Some dogs vomit and refuse their food early in the attack, while others eat ravenously at first, but anorexia soon appears. Occasionally a dog shows a tendency to eat his bedding and other foreign bodies. A brownish red discoloration of the gums next to the teeth is often seen, and superficial ulcerations on the gums and on the upper lip where it comes in contact with the canine and incisor teeth are not unusual. Late in the disease the tongue assumes a shriveled, dry appearance. The nose is cool during the entire course of the disease and does not discharge, but the eyes become somewhat or greatly inflamed and reddened, and often have a curious, fixed expression with the pupils dilated. No skin eruptions occur. A slight cough may be present and is most apt to occur coincidentally with a hypostatic pneumonia. Emaciation is astoundingly rapid, and, in the cases with bloody diarrhœa, a profound anemia promptly occurs. The animal often sleeps a great deal and becomes lethargic and very weak. We have not seen paralysis and the so-called chorea occur as complications, but more or less severe epileptiform convulsions may occur. Death results from exhaustion—often with a sudden collapse.

The mortality is very high. We should say about 30 per cent. in all cases. The prognosis is usually absolutely unfavorable when the attack commences with vomiting and a bloody diarrhœa, and in puppies. Since the severe cases only are taken to canine hospitals, the mortality is much higher in hospital practice.

We do not believe that dog plague is nearly as common as distemper.

One attack apparently confers complete immunity to this disease, but not to distemper, nor does a severe attack of distemper seem to confer any immunity to dog plague. The authors had a fatal outbreak of dog plague exterminate a lot of experimental puppies which had recently passed through true distemper as the result of inoculations. One of us has personally shown at the same show dogs immune to both diseases, dogs which had passed through distemper, and others immune to dog plague only, and has had both diseases break out in the dogs which were susceptible to each, but not in those which had previous attacks of both diseases. It must be remembered, however, that true distemper does not always confer a lasting immunity, but second attacks are less fatal, especially if the first one was severe.

We believe that the gross morbid anatomy of this form of disease is characterized by a marked thickening of the mucous membrane of the small intestine so that it assumes an edematous, velvety, hemorrhagic appearance. The longitudinal folds of the mucous membrane in the large intestine are thickened and hemorrhagic on their summits, a condition that we have only noted in the dog in cases of malignant jaundice. The contents of the bowel are red blood, and mucus in its upper part, while in the lower bowel there may be a black, sticky, tar-like, offensive fluid, or mucus streaked and mixed with blood. Sometimes the hemorrhage is so great that the contents look like tomato catsup or thick red paint. In true distemper we have not noticed this peculiar thickening of the intestinal mucous membrane. When pneumonia is present the changes in the lungs are not like the

familiar purulent broncho-pneumonia of distemper, but resemble those seen in a typical hypostatic pneumonia.

The differential diagnosis between isolated cases of dog plague and the enteric form of distemper is not easy. The principal difference in the symptomatology of the diseases have already been pointed out. When the disease becomes epizootic in a kennel, the absence of nasal discharge, severe cough, chorea, paralysis, and the rarity of continued high fever in any of the dogs attacked makes the diagnosis comparatively easy.

Dog plague must also be distinguished from an acute invasion of uncinaria or hook-worms in puppies and young dogs. This terrible scourge of the kennel is very common, and its symptoms in young pups are very like those of dog plague. The puppies are always very anemic, as is shown by the white gums and tongue, and have more or less diarrhœa before the acute symptoms manifest themselves. The only accurate way to differentiate the two is to make a microscopical examination of the feces of the sick puppies for the transparent, thin-shelled oval ova containing the segmenting embryo.

During the winter a circuit of bench shows was held in the Middle West, commencing with Louisville, Ky., Jan. 11-16, followed by Toledo, O., Jan. 17-19; Akron, O., Jan. 20-23; Cleveland, O., Jan. 27-30; Columbus, O., Feb. 3-6. Of the dogs shown on this circuit some began at Louisville, and most of the others at Toledo, and were shown at all the rest of the shows. At each city many local dogs not on the circuit would be shown.

The veterinarian at Columbus was a competent, careful man, and gave more than the usual attention to the dogs, but in spite of this a great deal of disease followed. We do not think, however, that any more dogs became sick after this show than is usual after any "tail-end-of-a-large-circuit-show," and simply chose this show as one of its type from which to obtain statistics.

A circular letter containing a blank with a large number of questions covering almost every possible point and symptom was sent out to each exhibitor. On the whole the answers to these were very carefully made.

The professional handlers gave us the most trouble. Two of those who did answer evidently did not tell the truth, but said that none of their dogs became sick as they had a secret method of preventing disease which they used, and no dogs handled by them ever became sick. We had seen sick dogs in the care of both of these men. Two told the truth and the others did not answer. We believe, however, that the answers represent fairly well the percentage of sick dogs for the whole show, as the handlers' answers only referred to the dogs owned personally by them.

Total number of dogs in show	385
Number of dogs given in answers received	230
Number of dogs which did not become sick	107
Number of dogs which became sick	123
Deaths	34
Complete recoveries	66
Recovering with partial paralysis or chorea	11
Recovery with blindness	1
Still sick (six weeks after show)	11

The answers were carefully gone over and all dogs with skin eruption, paralysis, chorea, nasal discharge and severe cough we considered as distemper. Those which showed nothing but severe diarrhœa we considered as dog plague. The two groups were:

Dogs which contracted distemper	73
Deaths from distemper	21

Of the 73 distemper cases, 63 were in dogs which were never known to have had the disease and 10 in dogs which were supposed to be immune from previous attacks. Of the latter, but two died.

Dogs which contracted plague	47
Deaths from plague	13

Twenty-five of these plague cases occurred in dogs which had previously recovered from severe attacks of distemper, and 22 (3 of which were fatal) in dogs never known to have had that disease.

Sick dogs in which the diagnosis was doubtful from the answers to the questions 3

Among the dogs which were clearly afflicted with distemper, including the fatal cases, 26 had chorea, or chorea with paralysis, 6 had paralysis alone, 14 had skin eruptions, and 39 diarrhœa. One bitch aborted her puppies. One dog had ulcerated corneas, resulting in keratoceles and total blindness. Among the dog-plague cases 4 had epileptiform convulsions.

Seventeen kennels had distemper introduced among their young stock by dogs returned from this show. One of the interesting cases was that of a fox-terrier which was apparently in perfect health and remained so, but when returned to his kennel after a "disinfecting bath," gave distemper to all the young on the place. A number of these died. This case illustrated how infection can escape the eye of the most careful veterinarian. We have also proved by experiments that dogs are capable of transmitting distemper for at least one month after their apparent recovery from the disease.

How long the contagion of dog plague lasts has never been determined, as we can often expose dogs directly to the sick animals without results; and yet at times it will affect every non-immune dog in a kennel and the greater number of those in a show. There is evidently some unknown factor in its transmission. When this is discovered we will know why many shows are not followed by plague while others have such a high percentage of cases following them.

In addition to these diseases, sarcoptic mange and lice are frequently contracted by dogs at shows. It seems to us that the veterinarian is certainly at fault when a mangy dog is permitted to be in a show. We heard of none of these after the Columbus Show.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

AN INTERESTING CASE.

By A. T. KINSLEY, M. Sc., D. V. S., Pathologist, Kansas City Veterinary College.

An investigation of a farm about 100 miles from Kansas City was made to determine, if possible, the cause of an equine disease that had been prevalent there for over a year. It was found that two horses had died during the last year and that two were now affected. The horses had all been used on the farm and were all raised in the immediate community. They had all been kept in the same barn, though in different stalls, fed the same kind of feed (corn, oats, chop-prairie hay, timothy, alfalfa), and given water out of the same well. The feed and water were of the best quality. During the night, rainy days and Sundays the horses were turned into a small pasture in which there was a small creek. The barn was fairly good and was located on high ground from which drainage was ample. The pasture was lowland, well sodded with blue grass, and contained a few large forest trees and a few small brush thickets.

Horses on adjacent farms were not affected, though the farms were separated only by a wire fence in some places, and the creek from the above-mentioned pasture also supplied pasture water to two farms immediately below the one on which the affected horses were found. The same disease was reported on two other farms, one three miles and the other four miles distant from this farm. In fact, the horse that first showed any symptoms on this farm was raised on one of the other affected farms referred to above.

The affected horses became unthrifty, anemic, weak and emaciated, though they had a ravenous appetite. The first two horses were affected for a considerable time, four to six months before they died. Of the two horses affected at the time of the investigation, one was a sorrel mare eight years' old and the other a four-year-old gray gelding. The mare's mucous membranes were very pale and apparently bloodless. Her blood

contained only 30 per cent. hemoglobin; the pulse was weak but regular; the respiration slightly increased; the temperature normal; in fact, the most evident symptom was weakness and it was with difficulty that she was led to a convenient place and destroyed. A careful post-mortem examination was made. The following are the post-mortem notations: General lack of blood; myriads of the larvæ of the strongylus armatus free in the peritoneal cavity; mesenteric lymph nodes all invaded with the larvæ of the strongylus armatus (some of the lymph nodes contained suppurative foci); invasion of practically all of the abdominal visceral blood vessels with the larvæ of the strongylus armatus where they had in most instances produced aneurisms and thrombi; the heart was slightly hyperthrophied. No other lesions noted.

A careful examination of the gray gelding revealed weakness and anemia (65 per cent. hemoglobin) and no other symptoms. A wobbling gait, more evident in the hind legs, was evident, but was thought to be due to weakness. Arrangements were made to send this horse to the Kansas City Veterinary College Hospital, where he was under careful observation from October 11, 1908, to April 1, 1909. Respiration and pulse rate were practically normal during the entire period. The temperature varied from 100° to 101° F. except on the 28th, 29th and 30th of October, when it was found to be 104° to 105° F., but this was the only marked temperature variation during the six months of observation.

A careful study of the blood was made to determine the percentage of hemoglobin, number of red blood cells, white blood cells, and the proportion of the varieties of the white blood cells. The hemoglobin varied from 65 per cent. to 90 cent. It gradually increased until the horse was discharged. The number of red blood cells varied from 4,000,000 to 7,000,000 per cmm., they were irregular in shape for the first six weeks and gradually assumed the normal appearance and were quite regular in shape by February 1, 1909.

The number of leucocytes varied from 6,000 to 24,000 per cmm., averaging 11,130 per cmm. The percentage of the different varieties of leucocytes observed on October 10, 1908, was as follows: Lymphocytes, 27 per cent.; mononuclears, 8 per cent.; polymorphs, 52 per cent.; eosinophiles, 13 per cent.; mast cells, 0 per cent. This was indicative of animal parasitism and the supposition was that the horse was infested with the strongylus armatus.

The following are notations taken from the record book: October 13th, horse received one quart of linseed oil in which was incorporated two ounces of turpentine. From October 25th to November 5th, the horse received the following—both morning and night—one quart linseed oil and two ounces of turpentine. Although the horse received five gallons of linseed oil and two and a half pints of turpentine, no noticeable effects were noted on the fecal discharge and no parasites were found in the feces. However, the percentage of eosinophiles diminished from 13 per cent. to 4 per cent and maintained at 4 per cent to 4½ per cent. until observations ceased.

The horse began to improve in every particular, except the wobbling gait, immediately after the course of oil was completed. Beginning on November 10th and continuing until February 20th, Fowler's Solution was given in two drachm doses twice daily for ten days, then nux vomica in small doses twice daily for ten days.

When the horse was discharged he was much improved, in fact the only noticeable symptom when discharged was the wobbling gait. Presumably the larvæ had produced aneurisms and thrombi in the arteries supplying the spinal cord, thus resulting in the imperfect co-ordination. No evidence could be found on rectal examination of diminished blood supply through the iliac arteries, and the pulse of the posterior digital arteries was apparently normal. Possibly larvæ may have passed through the spinal arteries into the neural canal and produced aneurisms and thrombi, which by pressure inhibited or interfered with the motor nerve impulses. Sensation was practically normal in the cutaneous structure of the posterior extremities, even down to the hoof line, thus the disturbance, if of the cord, was of the inferior and lateral columns, *i. e.*, those columns in which the motor nerve cells are located or from which the motor nerve fibres emanate.

Indexed B. A. I.

MYCOTIC LYMPHANGITIS.*

By Dr. W. F. Crewe, State Veterinarian, Devil's Lake, N. D.

Most of the authorities I have consulted do not refer to this disease as occurring in this country, but state that it is found in Japan, Sweden, Finland and France.

* Read at the North Dakota Veterinary Medical Association meeting.

It is known as mycotic lymphangitis, epizootic lymphangitis, Japanese farcy and pseudo farcy.

Dr. Mohler states that Dr. Pearson, of Pennsylvania, was the first to announce its existence in the United States in 1907, although, he says, it is possible that it has existed in various parts of the country for some time. Dr. Van Es advises me that he has diagnosed it in Alabama some years ago. Authentic cases have recently been found in Ohio, Iowa, California and North Dakota. It is also present in the Phillipine Islands, Hawaiian Islands and Porto Rico.

Mycotic lymphangitis is a chronic inflammation of the lymphatics and lymph glands in which proliferation and nodular thickening is produced followed later by a purulent softening.

The cause of this disease is a specific organism, the *Saccharomyces farciminosis*. The disease was first discovered by Italian and French veterinarians and the specific organism was discovered by Rivolta in 1873.

According to Mohler, the period of incubation varies greatly, extending from three weeks to four months or longer. In artificial inoculation with pus through wounds in the skin, inflammation and swelling of the lymph vessels may be noticed in twenty to sixty days, which show in their course a development of hard nodules from which abscesses form. The natural infection is presumed to be caused through superficial wounds, such as galls, barbed wire cuts, etc.

It is stated by Law that the infection may be introduced to parts of the body by the harness and affect the back, breast, rump, head, etc. Also, that in variable time (one to twenty hours) from time symptoms develop that the surrounding lymphatics become swollen and tender and nodular swellings appear on their course which fluctuate, burst and discharge a whitish pus. It is also stated that this disease may extend along the nasal passages and larger bronchi and finally invade the lung.

Nocard describes this affection in the horse as characterized by skin nodules (button boils) which burst and discharge a thick gummous or thin, oily, yellowish or bloody discharge. The surrounding lymph plexus swell up into corded lines with at intervals nodules or abscesses. In my observation some of these nodules were one and half inches in diameter and seemed to be of a fibrous nature with a small focus on the surface exsibiting a granular appearance.

Mohler describes the symptoms as follows: "The inflammation of the lymph vessels is usually first observed in the extremities, especially one or both hind legs; it may also appear on the forelegs, shoulder or neck. The lesions, as a rule, develop in the tissue adjacent to the place of inoculation. In the early stages of the disease the lymph vessels appear very hard and thickened, and along their course hard nodules develop, ranging in size from a pea to that of a hen's egg. Later, these nodules soften, burst spontaneously and discharge a thick, yellowish pus. The surface of the resulting ulcers or abscess cavities soon fill up with exuberant granulations which protrude beyond the surface of the skin, giving a fungoid appearance. The affected extremities are considerably enlarged, similar to cases of simple lymphangitis. The constitutional symptoms accompanying this disease are not often marked or may be absent. There may be a slight fever observed which seldom runs over 102° F. The appetite is not impaired except in the advanced cases."

It appears the diagnosis is based on the characteristic appearance of the ulcerations which show exuberant granulations, inverted edges, and thick, creamy glutinous discharge. These symptoms differentiate the disease from glanders, in which the ulcers are crater-like and do not contain the exuberant granulations. My opinion is that the safest and surest diagnosis will be secured by either applying the mallein test or making a microscopic examination of the pus. Owing to the possibility of confusing this disease with glanders-farcy it is the policy of the sanitary authorities to mallein test all isolated cases that may be found, where there is no history of direct exposure to glanders.

The treatment recommended is the entire extirpation of the nodules and infected vessels in case the lesions are localized. Where abscesses are found they should be opened and thoroughly curetted and the diseased tissue destroyed by actual cautery or a severe caustic. The cavities should be packed with pledgets soaked in tincture of iodine, iodized phenol, creolin, lysol or dusted with aristol, iodoform or similar powder. It is quite important that the parts be thoroughly saturated with a good antiseptic to prevent further infection. Internally, tonics and antiseptics may be given, arsenate of strychnia, quinia, iron and copper sulphate and sodium hyposulphite are recommended.

The following picture is a case of nearly three years' standing, was mallein-tested with negative result. The picture was taken about four months ago and recently the owner telephoned

Mycotic Lympangitis (Psuedo-farcy).

me stating that the leg was breaking down and becoming very offensive and that he was going to destroy her.

NEW YORK UNIVERSITY will hold its seventy-seventh annual commencement on Wednesday, June 2, 1909.

ARMY VETERINARY DEPARTMENT.

TO THE ARMY VETERINARIANS.

On reaching Washington, D. C., from duty with the Army of Cuban Pacification, I called upon an old comrade, now on the general staff, who is the author of the army veterinary bill now before Congress.

In reference to this bill he made the following remarks—in substance, which he kindly authorized me to use as I might deem proper:

"The War Department looks with a friendly interest upon the army veterinarian and his progress in the service.

"When the present veterinary bill was in process of preparation we had the welfare of all in mind, particularly that of the older men whose years of faithful service entitles them to every consideration the department can give them.

"For this reason it was arranged that they should be exempt from examinations, recognizing, as we did, their hard, uncomplaining service and their valuable knowledge, gained in the rigid school of experience if no other. The younger men, we felt confident, would be able to pass the examination contemplated, and you must ever remember that the spirit of the service is not a harsh one but is always inclined to generous consideration for its faithful members.

"We do not think that there should be any objection on the part of the younger men, graduates of leading veterinary colleges, as you inform me, to these examinations, seeing that all promotions nowadays, except in case of very high ranking officers, is by examination. Examinations must always remain, and properly, too, a feature of any veterinary bill receiving the sanction of the War Department.

"In the present bill we did not make provision for disability for the reason that we did not know at the time it was framed that any of the younger men were disabled. Had we known this we certainly would have given it consideration.

"In this connection I would suggest that veterinarians who believe themselves unfitted for service through disability contracted in line of duty notify the War Department through mili-

tary channels, citing their cases, accompanied by the necessary data. I assure you they will be given consideration.

"Now, as to your suggestion for a different bill (organization and rank), I will candidly say that the Department is not now inclined to give it favorable consideration. I know you will have to be satisfied with what the Department is willing to give you now. When that is accomplished, it looks to me that an effort could be made to obtain the organization and advancement you mention.

"It must not be forgotten that military matters make progress slowly with us and that it is difficult to persuade Congress that many things asked for and refused are absolute necessities from our point of view. It is needless for me to ask you to look back twenty years or more and remember what a struggle we have had for the little we have gained. Take your own case, for instance. You have had a hard fight for the little you have received. The difference of opinion among yourselves must cease if you desire to be successful in your efforts for betterment, and you should make an effort through your association, or other authorized means, to have the present bill become a law next session of Congress.

"I regret very much indeed that we did not know of the disability of those of whom you spoke, before the present bill was framed, but it is not too late yet.

"You have my authority to convey these expressions to your confrères and to say to them that this Department has their interest at heart as much as it has any other branch of the service.

"You know the Department is in favor of the present bill, and sincerely hopes to see it become a law, and I believe it will."

NOTE.—The above is the gist of a long conversation on the subject near to our hearts. I think there is material for reflection in it. I have spoken on this subject with many others in Washington and their opinions were about the same.

GERALD E. GRIFFIN,
Veterinarian, Third F. A.

FT. D. A. RUSSELL, WYO., May 11, 1909.

THE North Carolina State Board of Veterinary Examiners meets for examination of candidates July 2, 1909, at Wilmington, N. C.

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

DENTIGEROUS CYST IN TEMPORAL REGION [*T. M. Inglis, M. R. C. V. S.*].—Under this title the writer relates the case of a well-bred Clydesdale gelding, two years old, which had an abnormal formation beneath the near ear which was about the size of a billiard ball. There was a fistulous tract with nasty foul-smelling pus. The animal was cast, the cyst opened and a well-formed tooth exposed, with its characteristic whiteness. It was necessary to break it so as to remove it, which was quite a difficult task on account of its condition and hardness. However, this was finally accomplished and the lining of the cyst, which was also bony, was also removed. Portions of the skin had to be excised so as to make the edges of the incision perfect. This is the first time such discovery is observed by the author. Although, says he, castrating cryptorchids frequently he has often met with dentigerous abdominal cysts and has also observed them in the facial sinuses, more particularly the frontal. He has also noticed that fillies presented these abnormalities more frequently than colts.—(*Veter. Record.*)

CARCINOMA [*E. Wallis Hoare*].—Cob gelding, 18 years old, has a tumor situated in the region of the frontal sinuses and extending up the parietal region. Soft to the touch, slightly fluctuating in the center, it is pyriform in shape. The skin covering it is thin and hairless. The tumor has been growing for ten months. Exploring needle pushed into it shows its great vascularity. An incision on its middle shows that it is formed of material resembling cerebral substance with thin, soft portions of bones in its depth. At the request of the owner an attempt was made to remove it; but its base being found composed of cartilaginous material, there was evidence certain that the cranial cavity would be entered by further interference. The operation was stopped and the wound dressed. After a few

days the animal died. Examined under the microscope, the tumor was found to be a carcimona with formation of abundant dense fibrous tissue.—(*Ibidem.*)

ALBINISM [*V. de V. H. Woodley, I. C. V. D.*].—In relation to information asked for regarding albinism, the author sends a few rough notes on some animals of the Lahore Zoological Gardens which may prove of some interest.

1st. A white buck. The hair of this animal is totally white. The skin on those places where hair does not grow is pink. The eye is not pink, as may be expected, but dark in color, the pupil being of a light blue and the iris almost black. The animal was mated with ordinary does of his own breed and the progeny was lighter in color than normal. He was allowed to top one of his own daughters, the result being an albino.

2d. A white jackal (male). Coat pure white, skin of muzzle and paws pink, eyes almost the same as previously described in the buck, but appear to be affected by the sun, as they are generally kept half closed. No experimental breeding has been tried with the jackal.

3d. There is a pure white peacock in this garden. When crossed with the ordinary wild peacock about 40 per cent. of the young are pure white. Endeavors were made to breed from this white cock and one of the white hens, but the experiment failed.—(*Veter. Record.*)

CHOKING IN COWS [*J. Donaldson Pottie, M. R. C. V. S.*].—The writer considers that in relation with what has been written on the subject, it may not be out of place to mention a matter which, if known to many veterinarians, has been overlooked in the discussion, which has taken place lately on that question. It is the external application of heat in difficult cases of cervical obstruction of the œsophagus. Fomentations and poulticing to the neck, he has found much advantageous, in obstinate cases and he recalls one in which he used the trocar and canula to pierce the rumen to prevent suffocation and in which the obstruction could not be removed for three days; although probang, oil, belladonna, etc., were tried daily. Hot water fomentations and poultices saved the animal, as on the third day only, he was successful in displacing the obstruction with the probang. He has used the same treatment with similar results in horses and considers it superior in cases of spasmodic contractions of the œsophagus.—(*Veter. News.*)

FOUR COMPLICATED CASES OF STRANGLES [*J. Martin Ries, V. S.*].—When an outbreak of strangles, says the writer, commences in the pharyngeal region, it is common for all susceptible animals in the same stable to become affected in a similar region. Then he follows by the description and the indications of treatment in such cases with the possible mild complications and then those of more serious nature, amongst which he selects four of the cases which he had to deal with. The first is a filly of 12 months. She began her sickness with an abscess in the pharyngeal and subparotid regions. She died rapidly with lesions in the affected regions, the gutteral pouches, purulent pleuritis, pericarditis, pneumonia and abscesses in the stomach and abdominal lymphatic glands.

Case No. 2.—Mare, 8 years of age, in same stable as the first, dying with solidification of both lungs with abscesses, purulent peritonitis, multiple mesenteric abscesses, ruptured stomach not connected with the strangles.

Case No. 3.—Three-year-old colt, has had colicky pains, constipation, submaxillary abscesses. Later had pelvic abscesses. Died. Post-mortem: Purulent collection in the pelvic and posterior abdominal regions. About 50 mesenteric abscesses. Intestinal organs give out a very fœtid odor.

Case No. 4.—Two-month-old colt. Submaxillary abscesses and later abdominal disturbances. Death. Pus is found oozing from the right ear. Incision of the forehead gives escape to pus. Watery collection of pus in the cranial cavity. Guttural pouches contained caseous pus. Mesenteric glands with abscesses.—(*Veter. Journ.*)

HERMAPHRODITISMUS VERUS LATERALIS IN SUS SCROFA [*B. F. Kingsbury*].—External genital were those of a male. Penis was normal. Perineum presented well-developed ridge, suggesting the vulva of a female. Internal organs indicated strongly that it was a case of true hermaphroditismus. There was a usual small corpus uteri with two relatively long uterine horns. Cornua, corpus cervix and vagina had a lumen. There was no orifice vaginæ. No trace of testis, epididymis or vas deferens were on the left side. But on the right there was an evident testis, with epididymis and vas deferens. There was a little body on the left side, the ovary, which was not present on the right. The microscopical examination confirmed the diagnosis.—(*Veter. Journ.*)

NOTES ON ACONITE POISONING [*R. C. Moore, C. A. V. C.*].—Relating a few notes on the subject, with mention of the symptoms: Frothing at the mouth, arching of the neck, anti-peristalic action of the œsophagus, similar to those of choking, staggering gait, colicky pains, delirium and death. Early treatment of hypodermic injections of physostigmine, followed by one of sulphate of atropia twenty minutes later, was usually successful, if carried out early. Post-mortem: The lesions consist in those of gastro-enteritis. To detect aconite in drinking water or in the contents of the stomach: Slightly acidulate with few drops of acetic acid, if aconite is present a red crystalline precipitate will be formed on adding a few drops of a solution of permanganate of potassium.—(*Ibidem.*)

THREE ILLUSTRATED INTERESTING DENTAL VARIATIONS [*R. E. Holding*].—1st. Case of supernumerary upper incisives in the horse. There were nine incisives, two supernumerary and one retained deciduous tooth. By the illustration, it appears as the two nippers are the normal ones, on each side of these there were two teeth which look like dividers, the deciduous tooth was on the left side between the divider and the corner tooth.

2d. The jaw of a zebu shows a rare variation, viz., the complete reversal of the position of the lateral incisors, the inner face of the tooth having become the external.

3d. The jaw of an ox in which the teeth are very irregular and overlap; some being set well forward, others backwards. The jaw had been the seat of an extensive fracture.—(*Veter. Journ.*)

SUCCESSFUL HYSTEROTOMY ON A RUPTURED BITCH [*Arthur Payne, F. R. C.*].—This Dandie Dinmont bitch was operated once for left inguinal hernia and recovered. Four weeks later she had another hernia on the right side which soon was as big as a goose's egg. The dog was covered accidentally and finally a fœtus could be detected in the hernial sac. Natural length of time was allowed for delivery and then she was operated with the Cæsarian operation, fortunately only one fœtus (dead), being present. It was found impossible to reduce the hernia at that moment and decided to wait for the cicatrization of the uterine wound, when the author hopes he may have another chance to reduce the hernia.—(*Ibidem.*)

HEART DISEASE IN A DOG [*R. F. Stirling, M. R. C. V. S.*].—Four-and-a-half-year old pointer, pet of a lady, died in playing with children. P. M.: All the organs healthy except the heart, which has the edges of the cups of the mitral valve markedly thickened and shrunken, but without verrucose condition. Is not such lesion rather unusual in a dog of that age?—(*Ibidem.*)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

RUPTURE OF THE BLADDER IN A STEER [*Mr. Trillaud*].—This animal was ailing for one day, having colics which, being treated by an empiric, failed to be relieved. Quite in good condition he has refused all food, ruminates no more, he grunts when male to move and looks very dull. The nose is dry and the conjunctivæ congested. The horns are warm; there is a little tympanitis. In the presence of such condition, indigestion is suspected and the animal treated accordingly. After two days, beyond the fact that he has passed manure and water, he is in about the same condition, there is no improvement and after a few days the owner decides to send him to the butcher. At the post-mortem, the thoracic organs are found healthy. In the abdomen, the rumen and the omasum are packed with hard, dry food, the bladder was intimately adherent to the intestines and to the walls of the pelvis. It was ruptured and had allowed its contents to escape in the abdomen where an enormous quantity of fluid had accumulated. Yet the meat had no bad smell of urine. The external face of the bladder was blackish near the place of the rupture. Large clot of blood was also present in the vesical cavity. No calculus were found in any part of the urinary apparatus.—(*Revue Veterin.*)

CASTRATION OF CRYPTORCHID BOARS [*Mr. H. Gavet*].—Adult pigs affected with cryptorchidy on account of the peculiar odor and bad taste of their flesh must be operated. By the flank, as young sows when they are between one month and six weeks old, but when they are older, adult, say eight months or more,

the only possible way is with laparotomy. The author relates the case of a ten months' old porker which had a strong smell of urine about him, was ugly when with other animals, and though he had two cicatrices indicating that he may have been castrated, yet was considered as cryptorchid by the owner, who takes all the risks of an operation. Properly secured in a dorsal decubital position, the skin was closely shaved and washed with boiled water and peroxide, the abdomen was opened by an incision, width of two fingers on one side of the median line along the penis and parallel to it. Two fingers, introduced in the abdomen, soon detected the testicle which was as big as the fist of a man and required greater dimensions of the abdominal opening. The incision was made a little longer, the testicle taken hold of with the hand brought out and removed with the ecraseur. Peritoneum, muscles and tunica abdominalis were sewed together with one catgut suture and the skin with another. No further care, except clean bedding. Recovery in a few days. Killed after six weeks, the body weighed 118 kilogs. All smell of urine had disappeared. The meat had the aspect and taste of all normal meat. Cryptorchid pigs ought no longer be seen on market stands or in slaughter houses.—(*Rev. Gene. de Med. Vete.*)

Torsion of the Uterus in a Sow—Relapse—Recovery [*Mr. Th. Zeer*].—Since a few hours a pregnant sow makes violent efforts and is in great pains. The hand introduced with difficulty in the vagina revealed an uterine torsion to the left. The index finger introduced in the folds reaches the lower jaw of the fœtus but cannot go further. The animal is secured and rolled as is usual in such cases. After several turnings the lower jaw of the fœtus can be secured with nippers, the torsion disappeared and a dead fœtus is easily extracted. Exploration shows that the passage is clear and free and another fœtus is felt in the right horn. The animal is left to her natural process of delivery. But after waiting two hours she is again taken with pains, she has not delivered, the torsion has returned. Second operation of rolling and soon the trouble is removed and a second dead fœtus is taken away. Afterwards the sow delivered six living young ones. As sequelæ the animal had metritis complicated after a few days with loss of appetite, loss of milk and by a peculiar well-marked burning, itching of the entire croup as far as the loins. Not knowing exactly what was the trouble, the writer advised to let the animal go out in the field close by

and where a little marshy river ran. As soon as the sow was out she ran to the water, drank freely and laid down in the river, where she was left for half an hour. This she repeated every day until she laid three and four hours in her bath. Her condition improved, her appetite that had gone returned and she soon was fat enough to be killed.—(*Presse Veterin.*)

Treatment of Contused and Extensive Wounds of the Head [*Messrs. Tatte and Vielly*].—A mare has been the victim of an accident and has received severe injuries. She carries her head low down and the forehead and poll are the seat of a large swelling. Her temperature is only 38 degrees. The most important wound has an angular form. Starting from the summit of the head it runs towards the poll, backwards of the occipital protuberance and extends forwards on the median line until it reaches near the left eye. The skin is loose and retracted and the wound is some 10-15 centimeters wide. The left ear is drooping, the temporo-auricular muscles partly divided. The crotaphite muscle is infiltrated, blackish and lacerated. This muscle on the right side is torn. The parietal bone is exposed, broken off, and pulled backwards by the ligamentum nuchæ. There is also a small wound near the left eye. The frontal bone is fractured and the sinuses are open. Treatment: Injections of antitetanic serum, disinfection of the wounds, washing with tepid cresyled water, solutions of sublimate or permanganate, peroxide or boric acid powder as indications direct them, protecting dressing. The suppuration has become abundant and of bad nature. After one month's treatment a swelling appears on the superior border of the neck, necrosis of deep tissues is suspected and a free incision is made. From that time, free washings and injections in the wound of a solution of water containing phosphate of sodium, bicarbonate of soda, and chloride of sodium are resorted to and with them the general aspect of the wound is improved, suppuration modified, swelling passes away and finally complete recovery is obtained.—(*Journ. de Zootech.*)

Paralysis of the Anterior Tibial Nerve After an Attack of Azoturia [*Mr. Freger*].—After being laid up with azoturia a few days, this horse improved and presented the following symptoms which made the author diagnosticate "Paralysis of the anterior tibial nerve." When brought out of the stable the aspect of the animal showed a great stiffness behind. Standing at rest there is nothing peculiar, the animal stands

plumb on the plantar surface of both hind feet. In walking, the troubles of the locomotion are readily observed. When the leg is about raised from the ground, the tendo achillis becomes relaxed, flabby and presents wrinkles well marked on its middle. The cannon bone remains hanging and freely oscillating and instead of being flexed on the tibia, is extended backwards nearly as a prolongation of that bone. The leg then arrives at the resting position. What has occurred in one leg takes place in the other. In trotting, the symptoms are still more marked and the gait of the animal is very curious. It seems as if the hind legs, remaining behind, were drawn towards the body, so great is the extension of the cannon upon the tibia. It must be remembered that in all the motions the raising of the foot from the ground was always difficult. No treatment was applied. The animal was kept to work. The symptoms remained the same for six months except in the right side where they disappeared much quicker.—(*Journ. de Zootch.*)

NEW OBSERVATION OF LYMPHADENOMA OF THE PRESCAPULAR AND ANTERIOR MEDIASTINE LYMPHATIC GLANDS IN A MARE [*Mr. L. Bretegnier, Army Veter.*].—Aged ten years, this mare is reported as not in condition. She is dull, has lost her appetite, works poorly and sweats abundantly after a short trot. She presents a marked hypertrophy of the prescapular lymphatic glands, which on each side of the jugulars appear as painless tumors, slightly bosselated and loose. The veins and the original branches are gorged with blood and raised under the skin. The visible mucous membranes are cyanotic. There is a small swelling under the chest and sub-sternal regions. Auscultation of the heart is negative. Diagnosis is made of a tumor at the entrance of the chest and the prognosis is serious. Placed on observation the symptoms soon assume a more serious aspect. The appetite is all gone. The deglutition remains normal. There is no ptyalism. The swelling has increased under the chest and goes up the neck. The animal has a very severe crisis of asphyxia and died. Abundant escape of yellow serosity takes place as the swelling of the chest is cut through at the time of the post-mortem. The prescapular lymphatic glands form a bilobulated tumor, pressing upon the trachea, œsophagus, carotids and jugulars. They are continuous to an enormous neoplasm which weighs 5 kilogs 100 grams and fills the space between the two first ribs, then extends to the pulmonary lobes, passes over the

heart in pressing over the auricles and goes to be attached to the pericardium and costal pleura. In the mass of this growth, organs, blood vessels and nerves of the thoracic cavity are more or less involved. It seems of recent formation and examined with the microscope sections of it prove it to be a lymphadenoma. The liver was hypertrophied and weighed 8 kilogs 500. The spleen was also enormous and weighed 6 kilogs 700 (splenomegalia). The ovaries were also hypertrophied. Other parts of the organism comparatively healthy.—(*Recueil de Mede. Veter.*)

Invagination of the Ileum in the Cæcum in a Mare [*Mr. Pruneau and Mr. Castaing, Army Veter.*].—This animal has been subject to colics. These are never severe and have readily yielded to treatment. This time she exhibits similar symptoms and after an opiate drench is relieved. She remains apparently well until late in the day when the colics return and rapidly increase in severity. Conjunctiva are injected, pulse small and thready, respiration short and hurried, no tympanitis. The animal looks towards her right flank, throws herself down and assumes a dorsal decubital position, where she seems to find some relief or at least some ease. Rectal examination is negative. In the middle of the night she dies. Post-mortem: Sero-bloody effusion in the abdomen. Stomach largely distended and containing but little food. The last portion of the small intestines is invaginated in the cæcum and the invagination protruding in that cavity measures about 4 meters. There is a strong constriction at the cæcal entrance and a fold of the mesentery surrounds the small intestines at that point somewhat strangulating it. The invaginated portion is thickened, softened and in a state of partial mortification. There was also a small tumor on the invaginated intestines as big as a hen's egg, which was certainly the cause of this rare accident.—(*Recueil de Medec. Veter.*)

Hygroma at the Point of the Sternum [*Mr. A. Louis*].—Prof. Moussu has written that such cases were rare. On this account the author recalls this case which he has observed in his practice. Normand cow, in pregnancy, in excellent condition, has at the point of the sternum a semi-spherical tumor, painless, fluctuating, and large enough to interfere with locomotion. It has been punctured once and yellow fluid has escaped, but the puncture has closed and the growth has returned. An aseptic puncture is made and followed by a free incision. After the escape of all the fluid an injection of solution of iodine was made and quick recovery followed.—(*Ibid.*)

ITALIAN REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

DISLOCATED MOVING CRYSTALLINE LENS IN A CAT [*Dr. Nello Mori*].—Old common-bred cat presented an abnormality of the right eye. In the anterior chamber there is a foreign body moving with every motion of the eye and having no adhesion with the surrounding structures. The pupil is widely dilated and remains insensible to the effects of strong light thrown in the eye. The foreign body has the form of a lens with convex surfaces, and the borders rounded. It is opaque, white in color and has a tendency to become more of a spherical shape. On account of the dilatation of the pupil, it can travel in the eye without touching the pupillary margin. Convinced that it was a dislocation of the crystalline lens the author did not examine the eye with the ophthalmoscope but resorted to the test of light according to the method of Purkinge-Sanson to control his diagnosis. The other eye was normal. After examining the same cat three days after it was observed that the anterior chamber was clear. The lens had disappeared. Had it been absorbed, or passed in the posterior chamber? Another Purkinge-Sanson test proved that it was not certainly in its normal position. At any rate, it was not absorbed, as a short time later the crystalline lens was again found and still floating in the anterior chamber.—(*Il Nuovo Ercolani.*)

PRIMITIVE SARCOMA OF THE KIDNEY IN A CAT [*Dr. Giovanni Vallillo*].—While the cases of observations of tumors of the kidneys in the domestic animals are quite frequent, the author remarks that he has failed in finding a single case relating to cats. The case which he says was published by Prof. Petit, of Alfort, referred to one animal which had previously been operated for a tumor of the mammæ and probably the lesions found at the post-mortem were secondary tumors. For his own case, the animal had died from catarrhal gastro-enteritis, of which he had all the lesions with, besides pathological condition of the kidneys, which he describes as one of the globo-cellular sarcoma with small round cells.—(*La Clin. Veterina.*)

Uterine Perforation by the Penis of the Male During Copulation in a Heifer [*Dr. Raggero Fracaro*].—Only 18 months old, this young animal, rather of a delicate build, was covered by a strong and very robust bull. After being served, she looked dull and returned to her stall in walking slowly, a few meters away. In that short journey about one tablespoonful of blood and the dripping of a few drops after were passed from the vulva. She manifested some pains, defecated and urinated quite repeatedly. She refused all food, and did not take any drinks. When the writer visited her she was in about that same condition, had no fever and her pulse was fairly good. But rumination had stopped entirely. By vaginal exploration, only a little clot of blood was noticed on the anterior half of the vagina. Observing nothing else apparently abnormal, the condition was considered as the result of a first coit and the animal was left alone and watched. Soon, however, the condition seemed to grow worse, the symptoms became alarming and finally it was decided to send the animal to the slaughter house for the butcher. At the dressing of the carcass the uterus was found containing a large clot of blood partly firm and partly in state of decomposition. The mucous membrane was impregnated with coloring substances giving it a bluish aspect. Outside the uterus, near the border of the broad ligament, there is a clot of blood also quite large. There was on the superior wall of the uterine neck a solution of continuity some 4 centimeters long which involved the mucous and muscular coats. The peritoneal covering of the organ was intact. This solution of continuity, quite small, was concealed by the folds of the uterine mucus. It was quite difficult to discover it at first.—(*La Clin. Veterin.*)

Median Cheiloschisis [*Dr. Oreste Fantin*].—Harelip is not as common in solipeds as in some other species, hence the following may be of interest. The subject was an old horse which on account of excessive lameness by spavins was about to be destroyed. The peculiar aspect of the upper lip called the attention of the writer. It was divided on the median line in two equal symmetrical halves which, while they hang down over the lower lip, left between them in the middle a triangular empty space. The lip had its perfect motions. The upper maxillary had also its incisive teeth but the nippers were not close to each other; they were separated by a space of about 2 centimeters,

which was occupied by a mucous membrane much thickened, hard and resembling that of the upper jaw of cattle. The six teeth were there, but their arrangement had made the dental arch of the lower jaw also the seat of irregularity and the teeth met in forming a much inclined plane. The inferior teeth did not seem to have the same hard structure and the motions of mastication were executed more like that of cattle, that is from side to side instead of from upwards downwards.—(*La Clin. Veterin.*)

A MEMORIAL TO THE LATE PROFESSOR WITHERS.—Richard J. Withers, M. D., V. S., the subject of the bust portrayed elsewhere in this issue, was born in Luxboro, Bornsey, Hampshire, England, August 9, 1835, and died at Los Angeles, Cal., May 15, 1904.

In 1883, with Joseph Hughes, M. R. C. V. S., and Austin H. Baker, V. S., he organized the Chicago Veterinary College, becoming president of the institution and retaining this position until his death. He so endeared himself to the students of the college that a popular movement has been started by the alumni to erect a permanent memorial to him. This movement has resulted in the creation of the bust, the plaster cast of which is at present at the college in Chicago, where it has been submitted for the criticism and consideration of the faculty and alumni. It is hoped to raise enough money by popular subscription to have this reproduced in bronze and placed permanently in the college.

The bust is the work of Herbert M. Dawley, of Buffalo, N. Y., and is pronounced by those who have seen it as being an unusually faithful reproduction of the features of the former president. This is especially noteworthy in view of the fact that the subject was wholly unknown to the sculptor, he being forced to work entirely from three photographs loaned by Drs. Sayre and Ulm, and from criticisms and suggestions offered by Dr. Frank A. Crandall, curator of the Buffalo Zoo, Dr. George A. Lytle, inspector of meats, United States Army, and Dr. E. J. McLeod, general practitioner, all of whom reside in Buffalo at present and were students under Dr. Withers.

The bust will be in Chicago during the meeting of the A. V. M. A. in September, and it is hoped that all those who are interested in this movement will take advantage of the opportunity to inspect the work. Any suggestions, criticisms or comments will be gladly received by either Prof. Hughes, Dr. Crandall or Mr. Dawley, the sculptor.

CORRESPONDENCE.

THE APPROACHING MEETING OF THE A. V. M. A.

Confronted with the realization that time will permit of but two more chances to place before the readers of the AMERICAN VETERINARY REVIEW thoughts of the approaching forty-sixth annual convention of the American Veterinary Medical Association, and that it is time to culminate our plans to spell ourselves from the routine and exactness of business to journey to the meeting in Chicago during the early days of September, I am prompted to solicit space, thus endeavoring to stimulate general interest and co-operation; this that, working hand in hand, veterinarians may collectively aid towards making the approaching meeting the greatest ever.

Situated in a geographical centre, Chicago, with its multitudinous facilities towards furnishing entertainment, naturally lends stimulus to a determination to attend the approaching international (Canada and the United States) convention. Let us not, however, allow entertainment to act as the only stimulating force, but recollect that there will be representatives from the entire North American continent, thus affording opportunity for reunion, for lending further strength to the fraternalism that even now binds the practitioners of the adjoining countries, for opportunity to broaden the scope and enhance the value of our veterinary services by observation, discussion and by seeing or aiding in the practical demonstrations; indeed, all this is amply guaranteed by the environment of the local stock markets, abbatoirs, facilities for both pathological exhibits and clinical demonstrations and further by the literary attractions planned and accessible for the hours of convention week.

The state, provincial and municipal veterinary organizations, appreciating the worth and important character of these great international meetings, have selected delegates to the convention. This mingling with men of local and international repute it is anticipated will create an enthusiasm which will be carried back to the home bodies where many valued thoughts, observations and advances gathered through attendance with this greatest body of veterinary surgeons ever assembled in annual con-

vocation may be discussed, extolled and spread broadcast. Although it is believed that later meetings of the subsidiary bodies will further swell the delegate list we have at this writing knowledge of the following official delegated representatives:

Bureau of Animal Industry, Veterinary Inspectors' Association—Dr. A. L. Faunce.

Central Canada Veterinary Association—Drs. W. C. McGuire and A. E. James.

Chicago Veterinary Society—Entire membership not affiliated with the A. V. M. A.

Indiana State Veterinary Association—Acknowledges invitation and promises a big delegation.

Keystone Veterinary Medical Association—Drs. J. W. Vansant, A. W. Ormiston, Chas. Lintz, Thomas Kelly and Stephen Lockett.

Maine Veterinary Medical Association—Dr. A. L. Murch.

Michigan State Veterinary Medical Association—Dr. T. G. Duff.

Veterinary Medical Association of New Jersey—Delegates to be named at the Atlantic City meeting in July.

North Dakota Veterinary Association—Drs. E. J. Walsh, C. H. Babcock, W. S. Stinson and C. H. Martin.

Ontario Veterinary Association—Dr. E. A. A. Grange.

Pennsylvania State Veterinary Medical Association—Drs. Bradley, G. G. Blank and F. H. McCarthy.

Schuylkill Valley Veterinary Association—Drs. D. R. Kohler, W. G. Huyett and O. G. Noack.

St. Louis Society of Veterinary Inspectors—Drs. T. B. Pote and Henry Burke.

Texas Veterinary Medical Association—Drs. T. W. Matson and A. H. Wallace.

York County Veterinary Medical Society—Such members as attend will act as the official delegates.

The program, as yet far from complete *and even now earnestly calling for more literary contributions,* presents attractive features—a session for the reading and discussion of papers contributed by members of the committee on diseases, the subject-matter being mainly rabies, pernicious anæmia (swamp fever), and a general discourse upon American animal diseases, their control and recognition.

The committee on intelligence and education will lay before the convention information pertaining to that important feature

of modern veterinary science: improved educational and advanced sanitary control problems; these, though perhaps boresome in detail, are assuredly of no little importance to the present as well as the future veterinary surgeon. Are they not the substantial stepping-stones in the uplifting and opening opportunities of our science?

The topic of the day, "pure and wholesome milk," goes not unrecognized. A session will be devoted to this all-important and opportunity offering branch of modern veterinary science. We as veterinarians need this valuable instruction to adequately prepare ourselves to intelligently talk upon the subject and to competently fill places now all too frequently ignored by us and commonly occupied by laity unskilled with animal disease problems.

These features, though speaking volumes, are not all. Those in attendance will have occasion to listen to and to discuss papers that assuredly will appeal to the ambitious practitioner. They are offered by such men as R. A. Archibald, of California; W. B. Craig, Indiana; F. F. Brown, Missouri; G. H. Glover and B. F. Kaupp, of Colorado; F. S. Schoenleber, Kansas; William Herbert Lowe, Associate Editor of the AMERICAN VETERINARY REVIEW; H. F. Palmer, Illinois; J. W. Parker, Texas; E. A. A. Grange, Ontario, and, unquestionably, many other contributors dilatory in announcing their intended contributions which will be filled with valuable and interesting information.

The social features, sight-seeing trips, renewed acquaintances, reception and banquet, with ladies included, should by no means be ignored; the local committee of arrangements will make these sufficient to cause comment should we abstain from attendance.

But after all has been said, let us analyze upon and admit the purport of this preliminary announcement. We want all veterinary surgeons, members and others, to plan to attend the great meeting. You don't have to be members, but, none the less, we do most energetically urge you to become so if possible. Why? Principally because your membership will lend materially in the further upbuilding of your chosen calling and opportunity-offering profession; it does not matter if you are in the army, federal meat inspection service, a municipal officer, practitioner or what not, we need you, and hope that our force and power for good is sufficient to demonstrate that you need us. The annual dues are small, the benefits great—prestige, broadened fellowship, valuable free publications, advanced but

sound ideas, professional progressiveness, opportunity to influence public opinion, etc.

If you contemplate membership do not hesitate, and early application will greatly facilitate and lighten the burden of work of the secretary, which naturally increases as the time of the convention approaches.

Come, veterinarians, meet your Canadian, your United States confreres. We are determined that we need you, and, to reiterate, honestly believe that you can be materially benefited by fellowship in the A. V. M. A., the largest organized body of veterinarians in the world, but not as large or yet as influential as American veterinarians should make it. We trust that the force of this assertion will appeal to members as well as non-members, and in closing bid you all a hearty welcome to our deliberations and thus early to permit you to make your plans for Chicago.

RICHARD P. LYMAN,
Secretary.

A PREJEVALSKY COLT.

NEW YORK ZOOLOGICAL PARK, NEW YORK, May 10, 1909.

To the Editors of the AMERICAN VETERINARY REVIEW:

DEAR SIRS—I enclose a photograph of the first Prejevalsky colt born in America. This interesting event occurred on May 2d. and had been anxiously awaited for a number of days. Happily the mare foaled without assistance.

The Prejevalsky horse is of special interest owing to the fact that it is the nearest approach among wild horses and zebras to the domestic horse of civilization, and also supplies an important link in the chain of evolution which reaches down from the three-toed horse to the domestic animal of to-day.

The Prejevalsky wild horse comes from the great Sungarian Desert, in Central Asia, and is a recent discovery of a Russian explorer named Prejevalsky.

Owing to the remoteness of the region inhabited by this species and the fact that they keep to the wildest part of the desert, and are very hard to approach, the capture of these animals is a matter of great difficulty and expense. The cost of a pair delivered in America is about $5,000.

In appearance the Prejevalsky horse is somewhat smaller than the domestic horse. It also differs from the typical equus in having a short, erect mane, and in having no forelock. The long hairs of the tail, instead of commencing at the base, do not begin until half way down the tail. In this respect the Prejevalsky horse is intermediate between the true horse and the asses. The whole general color is

of a yellowish drab, paler and whitish beneath, and reddish on the head. The legs are reddish-brown to the knees and thence blackish to the hoofs.

While the animal is of small stature, under fourteen hands, the legs, however, are thick and strong and the head is large and heavy.

Respectfully yours,

W. Reid Blair.

The Board of Review of the National Trotting Association held its semi-annual meeting in the Murray Hill Hotel, New York City, last week.

SOCIETY MEETINGS.

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

Meeting was called to order by President Amos, at 10 A. M., January 13, 1909, at the Merchants' Hotel, St. Paul.

Roll call showed that there were fifty members present. The minutes of the last meeting were read and approved.

President Amos then presented the following address:

President Amos' Address.

Members of the Minnesota State Veterinary Medical Association—Another new year has been entered upon. We, as part of the people of the busy world, would enter to-day on duties and work of the coming twelve months towards the advancement and betterment of the veterinary profession.

The prospects ahead of us are bright, infinitely better than at the entrance of the year that has just come to an end.

Great advancement has been made along scientific lines, aerial, submarine, terrestrial, and professional.

With the continuance of bettered conditions, 1909 should fulfill the wishes that have been made for a prosperous and a happy New Year.

The past twelve months have been eventful ones; 1908 has made more history than most years of the decade; the new year just entered upon, especially the first two months, it will be well to watch. Elections are over, legislators have met, and it behooves our legislative committees to be ever on the alert to see that no deleterious legislation is sprung on us and allowed to become law without due consideration for the welfare and benefit of the veterinary profession.

New legislation and increased appropriations will be asked for, both for our laboratory work and our live stock sanitary board.

The laboratory for experimental work and for the propagation of hog cholera vaccine, the live stock sanitary board, so that they will not be crippled in the future, financially, as they have been in the past.

By using our influence with the legislators from our respective districts, we can have them prepared for the project when it is introduced on the floor of the legislature, have them posted and their support secured in advance of the vote on the respective bills.

We have had outbreaks of contagious diseases during the year, but, owing to the advancement of veterinary science and the better facilities of handling the outbreaks, the infection, to a certain extent, has been controlled.

A noteworthy fact, as demonstrated during the past year, is the efficiency of hog cholera vaccine; demonstrations have shown that hog cholera in the future can be successfully handled and that the loss is comparatively small where vaccination has been resorted to.

We are here to do business as well as to become better acquainted with the members of our own profession in our own state, and for social intercourse and entertainment.

Your board of directors, after considering the matter, decided to call the meeting of the first day, at nine o'clock in the forenoon instead of afternoon, so that we could get through with our election of officers, etc., and not need to hold a night session.

The time of the night session to be given over to a banquet at the Merchants' Hotel the first night.

With these few remarks, I will take up no more of your valuable time, having quite a lengthy and instructive program ahead of you.

Treasurer's Report.

The Treasurer was called upon for his report, which he gave as follows:

July 10, 1908, balance in treasury	$190 11
Initiation fees	27 00
December 7, annual dues	50
	$217 61
January 9, 1909, disbursements	64 35
Balance in treasury	$153 26

It was moved, seconded and carried that this report be referred to the Finance Committee.

A report on bacteriology was read by Dr. W. L. Beebe, which proved to be very interesting.

"The Use of Aconite in Inflammatory Conditions," by Dr. D. M. Campbell; "The Use of Tuberculin in Man," by Dr. H. L. Taylor, and "Acute Laminitis," by O. C. Selby, M.D.C., were papers of much merit. J. N. Gould, M.D.C., presented an interesting report on the "Phenal in Tetanus," and Dr. Bennet Porter gave his experience in "Dystocia in the Sow."

REPORT OF COMMITTEE ON SURGERY (Chas. E. Cotton, Chairman.)

It has been the custom in this society to hear from the chairman of the Committee on Surgery a resume of the new theories, operations and treatments that have been advanced during the year by members of our own and the sister profession. I have endeavored, with my limited opportunity, to prepare such a report.

THE SURGICAL VALUE OF IODINE.—The veterinarian has for years used iodine, either in the form of the tincture or combined with other vesicants in alcoholic solution as a counter-irritant for localized inflammation of vaginal sheaths of tendons, in synovitis and often in periostitis, with happy results.

It is claimed that Elsberg's solution, which is a 20 per cent. solution in alcohol and ether, while the tincture is a 7 per cent. alcoholic solution, will produce the same results as three applications of the ordinary tincture. This preparation is very valuable in the treatment of acute lymphangitis. It should be applied to the upper part of limb for an area eighteen inches wide and completely encircling the limb.

Dr. Veranus Moore, in the first edition of his pathology, stated that iodine was the one drug that would destroy and prevent the infection of the umbilical cord. I very forcibly remember the unpleasant experiences I had on a stock farm the first year following the founding of this farm, as a result of this infection. Four very valuable colts died.

Immediately after the publishing of Dr. Moore's pathology, I proceeded to have his instructions followed to the letter in the care of the umbilicus of foals. Since this has been carried out for a period of several years, only one colt has died as a result of this infection. This animal did not receive the treatment for some twenty hours after birth.

Iodine is useful in stimulating sluggish granulations, such as an indolent ulcer. Apply the pure tincture directly to the granulation tissue.

In the treatment of gangrenous ulcers the direct application of iodine will limit the extension of the process, hasten sloughing, lessen discharge and act as a deodorant.

Dannreuther, in the *Medical Record,* states that in his service at a Jersey hospital, he treated in the neighborhood of eight hundred patients with accidental wounds of all descriptions.

"We all know what the ordinary scalp wound looks like—laceration, hemorrhage, dirt, hair and sometimes vermin. And even with thorough cleansing, suture and gauze dressing (and dusting powders), we find that many of these wounds become infected, and if neglected, subsequently the pus may undermine the whole scalp."

Dannreuther made it his practice in all scalp, incised, punctured and lacerated wounds, after thorough shaving, washing with green soap and water and otherwise procuring cleanliness as nearly as possible, to inject tincture of iodine directly into the wound with an ordinary dropper. Enough sutures were then introduced to obtain complete coaptation, and a wet gauze dressing applied. It is important that this dressing be kept wet until there is primary union. He considers this the very best method of procuring sterilization of a dirty wound.

He does not include such conditions as a large lacerated wound where there is a great deal of contusion. Here sloughing naturally occurs, and iodine or any other such agent will not prevent it.

He says, however, it will limit the formation of pus. In such a case free drainage with constant hot wet dressings is a much better procedure than sutures.

Practically all the accidental wounds that a veterinarian is called to treat are of the same character, and I have given Dannreuther's treatment for infected wounds for the reason that the majority of us have been under the impression that iodine was too much of an irritant to a fresh wound to secure healing by first intention after its application.

Dr. W. L. Williams, in a paper presented to the Veterinary Medical Association of New York City on the "Systemic Handling of Wound Infection," states that the virtue of iodine given internally in the form of iodide of potash as systemic disinfectant has been clearly demonstrated clinically in the chronic wound infection of actinomycosis and botryomycosis.

He also obtained very beneficial results with it in acute purulent wound infection following operations, having clinically demonstrated that the iodine introduced into the system accomplished disinfection in a peripheral part of the body, and that it surpasses the efficiency of locally applied disinfectants and accomplishes what the latter fail to do.

He states "that the infection becomes disseminated amongst the living animal tissues and penetrates an important distance beyond the wound's surface so that the local application of disinfectants are impotent."

Williams prefers quinine in large doses when the infection is acute, the fever high and the case critical; but when it is not so acute and urgent, he prefers iodine and often combines the two drugs.

THE USE OF ANIMAL SERA IN SURGERY.—The use of antistreptococcic and polyvalent sera is highly recommended by some surgeons as effective in wound infection.

Dr. Williams states "that the profession, as a whole, probably admits the basic correctness of the theory, but are not yet ready to accept in practice the products offered."

From past experiences I am of the opinion, however, that the use of antitetanic serum as a preventive measure is absolutely reliable. Practitioners in large cities, where tetanus is very common, are not doing their duty by their clients or the cases if they fail to give an animal that has a punctured nail wound or any other wound from which the air is occluded, a preventive dose of antitoxin.

Allow me while speaking of the use of sera in surgery to call attention to the fact that physicians within the past year have reported instances of serious results following the use of diphtheria antitoxin, some of which have proven fatal. These observations may prove of value to veterinarians who may be called upon to administer antitoxin to animals other than horses. These effects of the serum are sometimes developed in hypersensitive individuals, and the condition has been named anaphylaxis or proteid hypersusceptibility. The reason for this in man is not well understood, although the phenomena following the injection of serum into animals have been carefully studied and described by Otto, Roseman and Anderson.

The minor manifestation of injection of serum in man, viz., skin eruptions, œdema and joint pains, has been called "serum disease." Landis, in a paper read at the International Congress

on Tuberculosis, states: "It has been shown that if a guinea pig be injected with a single dose of horse serum even in large quantities, no ill-effects occur. If, however, after an interval of some days the animal is reinjected with serum, death almost always follows. This hypersusceptibility to serum has been noted after an initial dose so infinitesimal as 1/1,000,000 c.c. Furthermore, an animal once sensitized apparently retains this hypersusceptibility throughout its life, and in case of the female may transmit it to her offspring. Immunity to this hypersusceptibility may be obtained by repeated injections of the serum during the period of incubation—that is, during the first ten days."

The *Journal of American Medical Association,* in an editorial of October 3, 1908, states: "It is highly probable, in view of the identity of the symptomatology of the reaction on guinea pigs and the symptoms as described in the cases of serum intoxication in man, that the latter are results of intoxication with a foreign protein in persons who have been sensitized to this protein, often in some unknown way."

This fact, however, has raised two important questions, one being why fatal or serious accidents have so seldom occurred in view of the frequency with which two separate injections are given to one individual at a considerable interval; the other, whether the fact that a person has had a dose of horse serum for therapeutic purposes renders it unsafe to administer another dose at some later time. The answer to both of these questions probably lies in the difference in the effects of doses, of serum by different routes.

In order that the second or intoxicating dose of serum may produce its lethal effects it must enter the circulating blood and be present in the blood in something more than an infinitesimal amount. Presumably it is in the central nervous system that the foreign protein produces its effects and it must reach this tissue by the blood (or by direct injection) in *not* too extreme a dilution. Consequently, it is found that a much smaller dose of protein will kill sensitized animals if injected directly into the blood than if injected into the peritoneum, and the symptoms appear sooner, for absorption from the peritoneum is slow, and the amount of foreign protein in the blood at any time is necessarily small.

By the subcutaneous route, Lewis says: "It is probably impossible to reach the certainly fatal dose because of the impossibility of getting rapid absorption. As 5 or 6 c.c. always develops

a well-marked reaction, it is probable that from 15 to 20 c.c., if absorbed at about the same rate, would prove fatal. It would seem very probable, therefore, that the few cases of fatal intoxication with foreign serum represent the occasional instances in which the serum has been injected directly into a vein in a person who has been previously sensitized, thus explaining the fortunate infrequency of these catastrophes. If this is the correct explanation of the serious results that sometimes follow injection of serum for therapeutic effects, it should be very easy to avoid danger from a second injection, and thus make repeated use of serum, when necessary, a safe procedure."

Injections should be made in all cases with a glass-barreled syringe, and by aspiration before injection the presence of the point of the needle in a vein would be indicated by entrance of blood into the syringe.

If one had reason to fear sensitization, knowing that the patient had been previously injected with serum, it would undoubtedly be well to give but a small fraction of the serum at first, waiting a few hours before the second, for it is known that sensitized animals receiving less than a fatal dose at the second injection, are then refractory to large doses given a few hours or days later.

The use of sodium nucleinate in the treatment of acute infections is becoming more general in human surgery, especially in Europe. This substance is a combination of nucleinic acid derived from fish or flesh of animals (not yeast) with soda. It is put up in sterile tubes, each containing 0.05 grammes of the salt. The best results have been attained by one or two large doses—0.30 grammes—once or twice a day. The injection should be given deep in the muscles, as the one objection to their use is that they are somewhat painful.

In an article by Dr. D. T. Laine, of Havana, Cuba, he says: "We have in this substance the most efficient means of provoking, within a few hours, an artificial hyperleucocytosis, especially of its polynuclear elements. Accepting the theory of Metchnikoff, that the white cells are the only elements of the blood actively concerned in the defense of the body against the invasion of micro-organisms, both the surgeon and physician will find in this drug a valuable aid in overcoming acute infection." Dr. Laine believes that the life-saving properties of normal salt solution, as universally used, lie as much in the fact of its producing an artificial leucocytosis as on its direct mechanical effect of filling up

the depleted circulation. The indications for its use are in acute infection or in the acute exacerbations of chronic conditions, but not in chronic diseases of slow and progressive evolution.

Dr. Laine reports ten cases in which the drug has been used with apparent excellent results, in both infections that have taken place and those expected to occur. Among these cases was one in a patient fifty-nine years old, operated on for perforating appendicitis, fœcal fistula, slow convalescense. About the twenty-eighth day acute lymphangitis of the left leg; high temperature; weak; rapid pulse and pain. An injection of 0.30 grammes sodium nulceinate was given, followed in twelve hours by another 0.25 grammes. There was immediate drop in the temperature, rapid improvement in the general condition, and recovery. Other cases reported were puerperal phlebitis, septicæmia as a result of abscess, and purulent peritonitis, all of which, after the administration of the drug, rapidly convalesced.

Allow me to take advantage of this opportunity to urge on practitioners the more general use of local and general anæsthetics. The large majority of our leading surgeons, connected with college hospitals, are now using anæsthetics in most of the major operations, but you all know that the general practitioner throughout the country resorts to its use but very little. As a result, the laity and our clients look on our profession as composed of men without any heart and without sympathy for the suffering animal, which undoubtedly tends to lower their estimation of us as individuals and as a profession.

We all remember some of the operations that have been performed at the clinics of this association, when the public were allowed to attend. The animals were not properly confined, no anæsthetic administered, and the audience was entertained by the sight of bloody and painful operations on struggling animals, which, of necessity, were prolonged under these conditions. The operator could not do himself justice nor the association.

By means of anæsthesia, we can get more aseptic surgery, keep the animals quiet, do a cleaner, quicker operation, control hemorrhage and be able to apply better and more durable dressings, thus getting healing by first intention in the large majority of operations. This insures the more rapid recovery of animals, better results from the operations and the animal ready to resume its work at an earlier period.

Another important argument for anæsthesia is the safety from injury by the struggles of the animal to the operator and assistants, as well as the animal.

Many practitioners, who have not hospitals or have no available colleague or practitioner whom they can call to assist them, hesitate to use general anæsthesia, feeling that they cannot administer the anæsthetic and also do the operation. This, in a very few cases, is perhaps true, but in the large majority of cases the operator can anæsthetize the animal with chloroform and then proceed with the operation, leaving any reliable layman to continue the administration of chloroform when necessary. Chloroform anæsthesia can be controlled, as it kills almost invariably from the stopping of respiration, and one can easily regulate it by occasionally watching the respiration.

For long continued operations, very satisfactory results can be obtained by the use of chloral, administered per mouth, or interperitoneal. One need not hesitate after chloral has been given and the anæsthesia is not complete to give morphia hypodermically, when you will get a profound anæsthesia, respiration will come very slow, heart action may drop to twenty beats per minute, reflexes will be present, and still the animal insensitive to pain. When operation is completed and you wish to leave the patient, a dose of strychnia, hypodermically, will sufficiently stimulate to get the animal on its feet in a very few minutes.

A large majority of the operations that the practitioner meets daily can be performed under local anæsthesia without confining the patient. With the use of cocaine locally, we have been able to do practically all of the standard operations on the extremities, but we have always been somewhat handicapped by the absorption and general stimulating effect of the drug on the central nervous system; especially was this true in double neurectomy of both limbs in nervous horses. We now have the benefits of adrenalin solution, which, combined with cocaine, prevents its absorption and general effect. Stovaine, encaine and anæstagine are also used by some operators because of the fact that they do not act on the central nervous system. I hope you will accept this plea for the more general use of anæsthetics in the same spirit as it is given, and I shall be satisfied if it influences any of you to its adoption.

Swamp Fever (So-called.)

(Dr. C. A. Nelson.)

The nomenclature of this disease has varied a great deal. It has been known as typhoid fever of the horse, malarial fever, infectious anæmia, pernicious anæmia, American surra and swamp fever.

Pernicious anæmia seems perhaps to be the most suitable for our present knowledge of the disease.

Pernicious anæmia is a disease peculiar to the horse, and, so far as we know, not communicable to other animals.

For some time it has baffled the efforts of investigators and general practitioners as well. Much remains yet to be learned about the mode of infection, as well as treatment of this disease. From an article in the November issue of the REVIEW, by Dr. John R. Mohler, we learn the cause of pernicious anæmia is an ultra-microscopic organism or virus present in the blood of infected animals.

Blood drawn from infected animals even after being filtered through the finest filters known is capable of producing the disease, when injected into susceptible animals, the virus is still active in infected animals twenty-four hours after death. How much longer the virulence is active is not known.

It is surmised that the infection is obtained through intermediate hosts such as flies or mosquitoes or through internal parasites. The embryos of which may be taken into the alimentary tract with grass or hay obtained from swampy lands.

The course of pernicious anæmia is generally chronic, extending over a period of from two to eighteen months, depending on the condition of the animal and other complications, such as colic and nephritis.

The period of incubation varies from ten to forty days, manifested at the onset by rise of temperature lasting four to six days. The fever generally subsides and the animal remains normal, or nearly so, for some time. There is then another period of fever more severe than the first; some animals succumb to this; others may again have a period of apparent convalesence before the final end.

Th post-mortem anatomy discloses a very much emaciated carcass and a bloodless condition of all visible mucous membranes. There is difficulty experienced in skinning, due to the absence of adipose tissue. Further than this most cases are conspicuous by the absence of macroscopic lesions. There may be subcutaneous and intermuscular œdemas in different parts of the body. Often there is hypertrophy of the heart and sometimes of the spleen and lymph glands.

There may be petechial hemorrhages of the serous membranes of the heart and lungs, with a serious exdate into the thoracic cavity. No particular organ or tissue is affected to any great

extent, with the exception of the blood. The most noticeable thing about the blood is that its pale color due to the diminution in the number of red blood corpuscles.

The count of red cells may run as low as two million to the cubic millimeter or a little more than a fourth of the normal number. The red cells remaining are paler than in the normal state and often altered in shape and size. The blood is also deficient in heamaglobin. Fatty degeneration of blood vessels and internal organs has also been noted.

Symptoms—The history of most cases is characteristic. The horse has been losing flesh in spite of a ravenous appetite. Inquiry generally reveals the fact that the animal was sick, perhaps has a spell of diarrhœa some time previous, that he has not been doing well and gets tired very easily. The veterinarian is perhaps consulted at this time in regard to the animal's teeth or he is called to see the horse in the second attack of fever, the temperature may run from 103 to 105 degrees. There is excellerated respiration without any apparent change in the lungs or other air passages. All visible mucous membranes are of a pale, dirty color. When the animal is moved, the gait is unsteady and dragging, especially behind. There is weakness and some sensitiveness over the loins. There may be diarrhœa and relaxation of the sphinxters resulting in involuntary micturition. Polyuria is a prominent system. Auscultation over the abdomen reveals increased peristalsis which persist all through the course of the disease. There may be swelling of one or more legs, as well as the most dependent part of the abdomen. Part or nearly all of these symptoms may be present during the fever stage. The most noticeable symptoms may subside even after the second stage of fever, but the lessened capacity for work, voracious appetitie, pale, mucous membranes, gradual emaciation and increased peristalsis are a constant chain of symptoms. Towards the end the temperature rises permanently. The respiratory rate is higher and the heart labors violently. There may be regurgitation at the jugular veins and the animal finally dies from heart failure or exhaustion.

Diagnosis—This is comparatively easy when one considers the history and has one or more cases under observation. The intermittent fever and the microscopic examination of the blood will differentiate it from leucæmia and anæmia due to other causes. In the early period of fever it might be mistaken for

pneumonia-influenza or lymphangitis, but the pale color of the mucous membranes and normal passage of air through the lungs and upper air passages facilitates the differential diagnosis.

Prognosis—This is quite unfavorable. The mortality is perhaps 70 or 80 per cent.; accurate figures are difficult to obtain.

Treatment—This is unsatisfactory in the majority of cases. A great many remedies have been used with indifferent success. Purgation is not advisable on account of its weakening effect, aside from the fact that the bowels seldom become torpid. During the onset of fever good results may be obtained by the use of acetanilid, quinine and other fever remedies. Later nux vomica, convallaria, belladonna, digitalis and other stimulants are indicated. Fowler's solution should be given as a tonic, continued for at least thirty to forty days, beginning with about two drachms and gradually increasing the dose to four drachms or more, three times a day.

In addition to this the animal must be well housed and clothed during cold or rainy weather, and should only do enough work for exercise. Since our knowledge of this disease is limited, and no medical line of treatment has been found which is universally satisfactory, our efforts should be directed towards prophylaxis. On premsies where the disease is found, pastures and meadows should, if possible, be disinfected by burning on the presumption that the forage is a carrier of infection. Horses should not be allowed to graze on land which is swampy and not well drained, nor should hay cut from such lands be fed to them.

Our Veterinary Medical Association, Its Benefits and Duty.

(Dr. R. LaPointe.)

The noblest and most worthy object for which a veterinary medical society is organized is the education of its members in the work of their profession. I do not know of any other calling in which it is so necessary to constantly study as in that of veterinary medicine.

One distinguished American diplomat, Andrew D. White, has written this comment upon Russia's most noted writer: "Of all distinguished men that I have ever met, Tolstoi seems to me most in need of that enlargement of view and healthful modification of opinion which comes from meeting men and comparing

views with them in different lands and under different conditions." The enlargement of view and healthful modification of opinion is as much needed by our profession as by men of letters.

Associations in nearly every profession have held from time immemorial, and it goes without saying in modern age, that a profession worthy of its name must have its association meetings; such meetings are of inestimable value to the young veterinarian, and he will doubtless attain into broader vision and safer opinions in due proportions to the extent of his personal experience in the direct practice of his profession by thus meeting and comparing views with others in the same profession.

This interchange of ideas and informal discussion of the common everyday subjects, and we all feel anxious to grasp any new ideas that may come up before such gatherings, cannot help but send fresh blood coursing through our veins and put new courage in our hearts, and we shall return home from such meetings happy to have become enlightened on some subject that has been troublesome to us, and pleased, it may be, to have been of some direct or indirect help to another.

I have already suggested why we should have these association meetings, but to specify more particularly, I propose:

Primarily, it is for the strengthening and betterment, practically speaking, of every member of the association.

Attendance at the meetings of our society comes to possess a charm for the earnest veterinarian like that of the camp fire rally of the soldier it leads to the cementing of old friendships and the formation of new ones, reacting upon the ordinary routine of work in the same manner as all alumni meetings.

The well-known effect of this is manifest in the sharpening of the intellect and broadening of the humanity of the veterinarian. This leads directly to the good advantage of all concerned.

Our association meetings are in many instances the only postgraduate course the practitioner will ever know. They may be made of constant and progressive value. Too often the veterinarian closes his books with graduation. But no professional man can afford to stop learning. Fellowship with men of like aims stimulates progress, activity and work. Isolation nurses stagnation. A man may resolve that in ten years he will be a great veterinarian; shut himself up in his narrow sphere, save money and the effort and time necessary to attend his association meetings. At the end of those years he is less a veterinarian than at the be-

ginning, for by that time even his dream will have become stale, his desire withered, his ambition gone out. The speediest horse is developed in the race, not at the plow.

Certainly, any intelligent member of our profession, knowing the possibilities of fellowship for social, financial and professional improvement, and ethical development attainable in a well-conducted association, should be unwilling even for a single meeting to deny himself the benefits which this society offers.

There is no man worthy of professional fellowship and public confidence who would not gladly be connected with such an organization. Every reputable veterinarian should be enrolled in this association. The time is near at hand when such membership will not only be essential to social position and material welfare, but will be considered a necessary requirement for professional standing.

This is especially true of the young veterinarian who needs the sympathy, encouragement and counsel of the older members of the profession. But our organization must have some work besides self-preservation. Its only reason for existence is the good it may accomplish, and it has a twofold obligation; first, to its members; second, to those outside its ranks. To its members the opportunities for benefits are unlimited, as I have tried to point out. To others, for example, the breeder and stock-raiser, the association can be of greatest service. We should cultivate public sentiment. Educate it in matters of hygiene and sanitation, instilling into it the great fact of its preventability of contagious diseases, the criminality of carelessness, the value of care.

It may be said if we educate the people to this extent that they will not need a veterinarian; but this thought is as narrow as it is evil.

We know that as a rule we get more business from an intelligent and educated owner than from one who does not know the first rudiments of our profession.

The public knowledge in regard to contagious diseases and their causes is very limited among our farmers. If there are any small animals that don't look well or don't thrive like the rest, rest assured there is something wrong with them, some unscrupulous stock-raiser will butcher and sell them; this is a very common occurrence with the poultry business. Therefore, I believe that one of the most important influences that organizations of this character serve is the education of farmers. Promotion of

knowledge among farmers is the basic need to-day. No other class of men has been so neglected as to farmers of this country. The live stock owners should be educated by means of official publications, the agricultural and the general press, lectures at farmers' institutes. A practical tuberculosis demonstration should be given by one who should have an infected animal slaughtered, explaining in this manner the workings of the diseases.

Let each one of us take it upon himself to have the many instructive veterinary articles that we know would be of benefit to the stock-owners reproduced in our local papers. In this way, as I have shown, we may best create public sentiment and indirectly reap our reward.

The secretary should have a complete list of the veterinarians of the state. It is a simple matter to check the membership list with the list of the veterinarians that thus make up the list of non-members. Probably a few of the names found thereon will be those of undesirable individuals who, for various reasons, would not be accepted by the association. The bulk of them, no doubt, are well-meaning and entirely respectable veterinarians, whose lack of interest in veterinary organization is due mainly to the fact that they have never been shown its important bearing on their professional work and its relation to the stock-raisers. The names of all these veterinarians should be included in the mailing list of the secretary, and to all desirable non-members should be sent announcement of our meetings.

There is no duty which the veterinary association owes which is of greater importance than that of looking after the recently graduated veterinary student.

We should all be possessed of the same desire to do all in our power to better as much as possible the welfare of the members of the association.

Report of the State Examining Board for the Semi-annual Period Ending January 12, 1909.

Legal Matters.—During this period we have had several rulings from the Attorney-General's office.

Duty of County Attorney.—In a letter written to the Attorney-General, under date of July 15, 1908, and answered by Mr. C. Louis Weeks, special assistant, under date of August 5, 1908, we stated the case of an illegal practitioner and a county attorney who was indifferent.

This was referred to the Attorney-General's office for advice concerning the duty of county attorneys in such cases and what further this board should do, under date of July 15, 1908.

In reply, Mr. Weeks stated: "Violations of chapter 419, Laws of 1907, constitute a misdemeanor only. Misdemeanors in the first instance are cognizable only before a justice of the peace. It follows that prosecutions for violations of chapter 419, Laws of 1907, should be commenced before a justice of the peace or in municipal courts having jurisdiction over misdemeanors. Justice and municipal courts have criminal jurisdiction over the preliminary examination of persons charged with crime."

Section 565, Revised Laws 1905, makes it the duty of the county attorney to attend before such courts *when such courts* shall request his attendance and furnish him a copy of the complaint.

We are of the opinion that it would be the duty of the county attorney to appear for the state in a prosecution for violations of chapter 419 when requested by the courts so to do and furnished with a copy of the complaint.

It probably would not be his duty to draw the complaint and initiate the prosecution.

The last clause of section 5 of chapter 419 provides: "In case any county attorney shall omit or refuse to conduct such proceeding, the board may employ another attorney for the purpose."

We have received under date of December 16, 1908, from Dr. ——, of ——, a very satisfactory letter giving full and definite statement and information and an accurate statement of the work done, fees collected, and witnesses who could be subpœnæd which would seem to give an abundance of very positive evidence for prosecution of this case.

A local attorney has been selected.

With this rather full, possibly tedious presentation of this case, I would respectfully ask for instruction from this board concerning further procedure. This is an important case because it involves a principle and gives us a precedent.

Is it your judgment that we should go ahead with the case, employing a local attorney, and undertake prosecution, understanding clearly that the county attorney is very indifferent and will probably help us as little as possible.

Disposition of Fines.—Under date of August 4, 1908, a letter was written to Special Assistant Weeks, in which he was

asked concerning the disposition of fines that may be imposed for violations of chapter 419, Laws of 1907.

Under date of August 5, 1908, Mr. Weeks replied that the wording concerning penalties in section 5 would not be sufficient to require that penalties recovered under this act should be paid to the examining board and such fines would therefore be disposed of as fines in other criminal prosecutions.

GRAND JURY.—Another case was where a movement was under way to prosecute an illegal practitioner, Dr. ——, at ——, when he suddenly left there and became an illegal practitioner at —— under the name of ——. He was arrested by the first-named authorities for fraud in connection with a board bill at that place. The prisoner was taken to the first-named place and kept in jail for some forty days. When he was about to be released the county attorney reported that the grand jury refused to indict the prisoner for fraudulent veterinary practice, and the county attorney declined to take any action in view of this. The grand jury's refusal was on the ground that the county had already been to heavy expense " for such a prisoner."

A letter was written to the Attorney-General stating the case and asking for information concerning the examining board's duty in such a case.

Mr. Weeks, special assistant, replied under date of July 13, 1908, that under the conditions as stated it was not incumbent upon our board to take further action, especially since the grand jury refused to indict and unless he again attempts to do veterinary practice without a license.

PROSECUTIONS.—We have had a number of very interesting cases up for consideration and prosecution. Some of these are still pending.

We had an illegal practitioner by the name of ——, who was doing illegal practice at ——. He was notified of his illegal practice, but the notice was returned unclaimed.

Later developments brought out the fact that he was still there posing as a veterinarian under the name of ——.

Your secretary wrote him a strong letter and also sent a carbon copy of the same to the livery stable where he had his office. The letter was acknowledged by Mr. ——, alias Mr. ——, who had made a written statement to the effect that he would abide by the request to cease illegal practice. In other words, he made definite promise to quit.

Another illegal practitioner, —— at ——, concerning whom complaint had been made on account of illegal practice, has recently been reported as "usually not in condition for practice." People are not calling for him any more and he is practically out of practice.

——, a licensed non-graduate, was prosecuted by ——, county attorney at ——, for pretending to secure license for a non-graduate who wished to register, and for receiving pay therefor. The result of the trial was that Mr. —— paid the county for all costs involved and returned the full amount of money received to Mr. ——, the non-graduate from whom he received it. Indictment was then quashed on account of —— age and his first offence.

OFFICE WORK.—Our methods in office work have not changed much since the last report. The board has gotten out a new lithographed letterhead which we think both quite neat and appropriate. The work of revising our list of legal practitioners is completed. Manuscript is now in the printer's hands for the manual arranged for at the last meeting of this board and the State Veterinary Association.

RECOMMENDATIONS.—In this connection I would respectfully recommend for your consideration the adoption of a policy to the effect that if a licensed man fails to renew after customary notices have been sent for three successive years, his name be dropped from the notification list on the grounds that the practitioner has probably moved away, is retired from practice, or is deceased.

A motion to issue a new directory was passed at the last meeting of this board. At the Duluth meeting of the state association it developed that the association wished to publish a new constitution and by-laws with list of members, etc. It was generally agreed at the time that it would be desirable to combine the two publications and get out something that would be creditable to the Minnesota profession.

The following shows the general contents of the proposed publication:

The Veterinary Profession in Minnesota.

(1) Introduction, desirability of Minnesota as a place for veterinary practice.

(2) Articles of incorporation and by-laws, State Veterinary Association.

(3) Veterinary Practice Act.

(4) Attitude of the Examining Board toward prosecution suits.

(5) Alphabetical list of registered veterinarians in good standing with abbreviations and explanations, for state association members, non-members, graduates and non-graduates (graduates and non-graduates in different type).

(6) Registered veterinarians in good standing, by counties.

I would respectfully recommend that this manuscript be accepted and publication ordered, the expense to be divided between the examining board and state association on the basis of the number of pages of matter in which each board is especially interested, dividing equally the cost items in which both are interested.

A motion was passed adopting a board policy of going a step further with prosecution suits by employing a local attorney when necessary.

MISCELLANEOUS.

LEGISLATION.—It is already clearly evident that the Minnesota veterinary profession must be on guard and watch the present legislature. The secretary of this board has already been approached by a senator from the western part of the state. This senator evidently has an important constituent whom he wished to have registered. If the present law does not permit his registration, Senator —— would like to amend the present act so as to open it once more for the registration of non-graduates. I have written him urging to not do this. It is very probable that something of this kind will be attempted either by this senator or by other members of the legislature.

The following is a reply to the letter written by the senator referred to above:

Hon. ———,

———, Minn.:

DEAR SIR—I have received your letter of January 1st, and note what you say concerning Mr. ——. If, as you say, he has been practicing veterinary medicine in this state for more than twenty years, he has been a constant law-breaker for at least fifteen of those twenty years, and should hardly now be rewarded by our law-making body for such persistent law-breaking.

There have been four different opportunities since 1893 for such men to register, and the results have been that the live stock interests of Minnesota have been cursed with a very large number of hopelessly ignorant and incompetent veterinarians. This has proved quite a hindrance in getting in educated and competent men.

I should be very much disappointed, indeed, to see this mistake repeated so late in the history of veterinary practice where there are abundant opportunities and first-class veterinary colleges where men can become well equipped for intelligent practice.

It seems a little strange that so many intelligent men think that a man may become comptent to treat diseases of animals with little or no training, whereas those same men would never think of employing a man not trained for treating diseases of human beings. As a matter of fact, more thorough training and keener and closer observation are necessary for good veterinary practice than for human practice of the same degree of efficiency for the human physician can get so much helpful information from his patients, even as to a definite statement of the case, results of previous treatment, etc.

Domestic animals probably have as many diseases and as many complications of those diseases as have people.

If you have the best interests of the live stock of Minnesota at heart, you will surely not introduce a bill in the legislature which will order the licensing of another hundred or two of densely ignorant or grossly incompetent men as veterinarians.

Out of the hundred which might register there would be probably two or three good citizens—quite intelligent men, capable of doing fairly good practice. The other ninety-seven would be composed of livery stable loafers, blacksmiths who had made a failure of their business, saloon loafers and that general class of men.

A very large majority of such men are a curse to live stock interests and a blighting disgrace to the veterinary profession.

A certificate with the seal of the state upon it is apparently a guaranty to the public of these men's competency.

The average farmer reasons that if this man has been licensed by the state, he must therefore be competent.

Granting that Mr. —— may be an intelligent man, sober, industrious, and a good a citizen, aside from his fifteen years of persistent law-breaking, I hope you will consider the amount of damage that you would do to the live stock interests of the state and to standing of the veterinary profession by opening the practice act for this one man.

It has been tried repeatedly to pass amendments to the practice act which would register only one man, but this has never succeeded.

Don't do all this damage to benefit one man.

Very truly yours,

Secretary.

It might be well for board members and members of the state association to interview or write their representatives in both houses of the legislature and insist on opposition to any tampering with the veterinary practice act.

Neither the state association nor the examining board will probably have anything in the way of veterinary legislation to be favored at this present session. Members should be urged to oppose any bill that proposes to alter the present veterinary practice act.

NEW METHODS.—We are now trying to inaugurate a new plan in prosecuting illegal practitioners by employing some one for the purpose of gathering conclusive evidence of illegal practice. This person is to witness surgical operations, payment of money and the names and addresses of witnesses who could be subpœnaed in case of prosecution. This statement of evidence is then to be sent in with the reporter's affidavit to the secretary of the examining board who would then put the case up to the county attorney for prosecution. We have offered to do this for several complainants where conditions seemed favorable, but with no very definite results as yet.

RENEWALS.—During the past year 85 of the total registered non-graduates have failed to renew.

Eighteen graduates have failed to renew.

Of the 86 non-graduate failures to renew, 26 have been on account of deaths; 37 have moved out of the state. This leaves a total of 23 in the state who have failed to renew.

Of the 18 graduate failures to renew, 3 have been on account of deaths; nine have moved out of the state. This leaves a total of 6 graduates in the state who have failed to renew.

During the past year 22 graduates have been licensed and added to our list. Out of the total list now in good standing, 129 are graduates and 105 non-graduates.

In my first report as secretary, January, 1907, there were included a total of 111 graduates previously licensed and 185 non-

graduates. At that time there were in practice 96 graduates and 133 non-graduates, an increase to January of 33 graduates and a decrease of 28 non-graduates.

FINANCES.—This board now has $50.29 on checking account at the First National Bank and $755.37 on interest bearing deposit at the Farmers' and Mechanics' Savings Bank at Minneapolis. This money has since earned $11.96 interest for the year.

This presents a very comfortable condition of our board finances. With an estimate of seven candidates, which we may reasonably expect for the January meeting, this board will soon reach the $1,500 mark and be in such a financial condition that it may safely undertake a large number of prosecution suits or do any other legitimate work which may be needed.

M. H. REYNOLDS, Secretary.

A general discussion followed the reading of the foregoing report, after which Dr. Amos announced that he would entertain a motion to adjourn, but before adjourning he declared the new officers installed as follows:

President—Dr. C. E. Cotton.

First Vice-President—Dr. J. P. Anderson.

Second Vice-President—Dr. J. G. Annand.

Secretary-Treasurer—G. Ed. Leech.

THE BANQUET.

An elaborate banquet was served in the dining-room of the Merchants' Hotel; covers were laid for fifty, and every seat was taken.

At the close of the banquet, Dr. Amos, the toastmaster, called for speeches from Mr. Robert Cricksmore, President of the Dairymen's Association; Mr. J. R. Morely, Secretary of the Dairymen's Association of Owatonna, and Prof. Andrew Boss, of the State Experimental Station. All these gentlemen responded in a happy strain, and spoke on the veterinarian and his relation to their different branches of the work.

Drs. J. N. Gould and S. H. Ward were called upon. The latter spoke about the indispensable "wind-jammer," which created considerable amusement. Dr. C. E. Cotton (President-elect) and Dr. G. Ed. Leech (Secretary-elect) followed. After which a solo was rendered by Dr. J. A. Annand.

THE CLINIC.

A clinic was held the next morning at 9.30, at Dr. C. E. Cotton's Hospital, No. 617 Fourth avenue, South Minneapolis, in charge of Drs. Gould and La Pointe, and was declared a very decided success. Those taking part in the operations were Drs. Shore, Beebe, LaPointe, Selby, Porter, Gould.

One of the most interesting operations was a "Cesarotomy" on a sow, performed by Dr. J. N. Gould. The operation was a success in every respect.

G. ED. LEECH, Secretary.

MASSACHUSETTS VETERINARY ASSOCIATION, TWENTY-FIFTH ANNIVERSARY.

The twenty-fifth annual meeting of the Massachusetts Veterinary Association was held at Young's Hotel, Boston, on the evening of April 28, 1909.

President F. J. Babbitt presided over a short session between 5.30 and 6 p. m., which was occupied principally in the election of officers for the ensuing year. The election resulted as follows:

President—Dr. Madison Bunker, Newton.
First Vice-President—Dr. Chas. H. Perry, Worcester.
Second Vice-President—Dr. W. J. Hennessey, Worcester.
Secretary-Treasurer—Dr. Wm. T. White, Newtonville.

The meeting then adjourned, and the members proceeded directly to a large dining hall on the floor above, where a sumptuous banquet had been prepared for them and their guests.

The tables were tastefully arranged, and each gentleman found a beautiful, long-stemmed rose lying across a slip bearing his name, at the place that had been assigned to him. Sixty members and visitors sat down to participate in the festivities of the occasion, it being the silver anniversary of the organization of the association, which had been effected in March, 1884, in the same excellent hostelry in which the celebration was now being held.

After an excellent repast had been partaken of and had proceeded as far as the coffee and cigars, President Babbitt rose in his position at the head of the table and called upon Toastmaster

L. H. Howard, who occupied a position at the other extreme end of the table to his right, to introduce the gentlemen who were to respond to the toasts. This Dr. Howard did in his usual happy and excellent manner, giving an interesting little address with each introduction.

He called first upon the past presidents of the association, beginning by presenting that old veteran in scientific work, Frank S. Billings. He was followed by John F. Winchester, who gave a historical sketch* of the association from its organization to the present date. Austin Peters was next presented and explained some of the difficulties incident to work in the Cattle Commission. He was followed by past presidents Thomas Blackwood, Alexander Burr, Langdon Frothingham, Benjamin D. Pierce, Daniel Emmerson and Frank J. Babbitt. The toastmaster then called upon the president-elect, Madison Bunker, who, poetical from the start, soon ran into verse and recited a very pretty little poem.

Toastmaster Howard then asked the members to rise and drink a toast to the "American Veterinary Medical Association," and couple with it the name of James L. Robertson, of New York. Dr. Robertson made a very feeling response in referring to "the old days," when he, with Dr. Liautard, Dr. Large and many others that he mentioned, used to make their pilgrimages to Boston, and to Young's Hotel, also, to attend the meetings of the then called United States Veterinary Medical Association.

To respond to the toast, "Bureau of Animal Industry," James F. Ryder, in charge at the Port of Boston, was called, and gave some interesting facts to his listeners.

Dr. Thomas Maloney, of Fall River, responded very ably, and in a most interesting manner, to the toast, "Veterinary Registration Board," and was followed by Mayor Coughlin, of that city, in response to the toast, "Municipal appreciation of the veterinarian." Mayor Coughlin gave a most interesting and scholarly address, which was thoroughly enjoyed by every one present.

At the request of the toastmaster, Secretary White read a letter from Prof. A. Liautard, Paris, France, Past Dean of the American Veterinary College, which brought forth a storm of applause that rang the length of the banquet hall. A copy of the letter is here reproduced:

* Follows this report.

PARIS, March 28, 1909.

Dr. W. T. WHITE,

Secretary Mass. Vet. Association:

MY DEAR DOCTOR—I have received your very kind invitation to attend the 25th anniversary meeting of the Massachusetts Veterinary Association and enjoy the good dinner that will follow.

Twenty-fifth anniversary—Young's Hotel gathering—meeting of so many of *my* own boys. Oh! how many good hours these recall to my mind! How dear and tempting they are! It was before your organization that in 1898 I made my last professional visit in America. So you see that my pleasure would be immense if I could only be present, and yet all I can say in acknowledging your letter is to thank you, Sir, and your associates for having remembered me for such occasion.

I cannot be with you on April 28th, but my heart will, my thoughts will also, and I promise you to empty a good glass of wine that I will drink, unfortunately alone, to the health of all the members of the association and to her everlasting success in her professional work.

Yours with best wishes,

A. LIAUTARD.

When the applause following the reading of Prof. Liautard's letter had subsided, Toastmaster Howard asked the gentlemen to rise and drink a toast to "Dr. Liautard," and couple with it the name of Prof. Wm. J. Coates, his colleague and successor in the A. V. C. In responding to this toast, which touched him very much, Dean Coates said in part:

It is a source of intense gratification to me to be present at the 25th anniversary of the Massachusetts Veterinary Association and respond to the toast, "Dr. Liautard." Looking over so many faces he knew so well makes me feel old, and puts in mind many things silvery. The silver threads that time has placed on your heads, so many silver-tongued orators that have given a gleam of wit to your silver anniversary, showing that everything to-day is running in silver.

Dr. Liautard, he said, always recalled with pride and pleasure those occasions when he had been present in Boston with the Massachusetts Veterinary Association, especially meeting so many graduates of the American Veterinary College, who were all to him "his boys."

Then Dr. Coates took up Science and said: Science is the essence of life, it has raised mankind and will keep on uplifting; as all problems are presented science finds the way to meet them, it brought light out of darkness, it fashioned things out of chaotic conditions and as the world progresses so will science.

He gave elaborately a description of the Goddess of Nature and told how we are trying to lift the veil that conceals the cause, the source, the spring of what to-day is called nature.

He spoke of the many worlds in space and the all-pervading force surrounding us shrouded in mystery, but to raise the veil is the highest and noblest aim and ambition of the human intelligence. He emphasized the fact that veterinary science has attracted the attention and admiration of the world by trying to arrest those diseases which are directly communicated from animals to mankind. The sciences have multiplied so greatly that it is difficult to name and number them, but biology he thought the study of the day. He referred to the number of animals whose lives have been sacrificed on the altar of investigation for the sake of science and closed by saying the telescope is showing infinitely great and distant objects, while the microscope is disclosing equal wonders in the small and near. He again thanked the members in behalf of Dr. Liautard and hoped the association would continue its good work.

At the conclusion of Dr. Coates's remarks, the toastmaster asked the members and visitors to rise and drink a toast to "The Veterinary Press" and couple with it the name of Dr. Robert W. Ellis, of the AMERICAN VETERINARY REVIEW. Dr. Ellis' remarks applied to Veterinary Journalism in a general way, and called the attention of his hearers to the many and remote sources from which the contents of a single copy of a veterinary periodical came. And, coming from many countries and divers tongues, what an amount of translating, transcribing and arranging must take place in order to convert the heterogeneous and chaotic bundles into the innocent, orderly conditions that we find between the cover-pages when our magazines finally reach our desks.

Dr. Howard then called upon Dr. James B. Paige, of the Massachusetts Agricultural College, to respond to the toast, "A Friend at Court," to which Dr. Paige responded in his pleasing, scholarly manner that is so well known and appreciated by his colleagues and friends.

The sensation of the evening remained for the last, when the toastmaster asked the gentlemen to rise and drink a toast to " The Ladies " and couple with it the name of Dr. A. S. Cleaves, of Gardener.

Be it known that up to this point the happy, rollicking Cleaves had been the " rooter " of the evening, and had risen to the call of each toast, and asked what was the matter with the gentleman whose name had been coupled with the toast in question, and on being answered " He's all right," queried "Who's all right"? On receiving the name of who was " all right," he stirred the band of music beside him to play, and every man in the room to sing, " For he's a jolly good fellow," etc. This was not missed on a single occasion, and his vitality seemed inexhaustible, and his ambition and good fellowship to know no bounds.

But when he was asked to " toast " the ladies he seemed for a moment nonplussed that anything so foreign to him should have been coupled with his name. But being a man of unusual resource he soon was equal to the occasion and delivered a masterly address. The band then played Auld Lang Syne, and the singing of this old-time song closed one of the pleasantest of evenings, and concluded the celebration of the twenty-fifth anniversary of the Massachusetts Veterinary Association.

Historical Sketch.

BY JOHN F. WINCHESTER, LAWRENCE, MASS.

The first gathering of Massachusetts Veterinarians to organize a state association, was held at Young's Hotel, March 18, 1884, at the adjournment of the twenty-first semi-annual meeting of the United States Veterinary Medical Association. F. H. Osgood presided, with M. Bunker as Secretary. It was voted that the charter members be graduates of regular veterinary schools. The following were chosen to pass upon the eligibility of members: J. S. Saunders, L. H. Howard, W. Bryden, F. S. Billings and C. P. Lyman. This meeting was adjourned subject to the call of the Chairman.

Conforming to the vote passed March 18, the next meeting was held at the United States Hotel, April 2, 1884, with fifteen men in attendance, namely, Osgood, Bunker, Saunders, Howard, Bryden, Lyman, Blackwood, Billings, Peters, Skalley, Simmons, Penniman, Sherman, Winslow and Winchester. At this meeting it was voted to resolve ourselves into the Massachusetts Veterinary Association.

Ballots were cast for President, Vice-president, Secretary and Treasurer, and an executive committee of three, with the result that W. Bryden was chosen as President; F. H. Osgood, Vice-president; J. F. Winchester, Secretary and Treasurer; F. S. Billings, J. S. Saunders and C. P. Lyman, Executive Committee. The Executive Committee was requested to present a Constitution and By-laws at the next meeting to be held the first Wednesday of May. This was done, and with a few amendments stood until March, 1906.

The Medical Library Association rooms at Boylston Place was first made use of in September, 1884, and at this time and place the first evidence of incompatability of members was shown, when the resignation of a member was tendered and accepted at the October meeting.

At the November meeting an applicant for membership was turned down. The applicant presented himself at the December meeting, asking for reasons.

In order to be in evidence, at the January meeting, the investigation of a Veterinary College was begun, also, the formation of a committee on original research. Average attendance, 12.

At the April meeting of 1885, F. S. Billings was elected president and his first act was to appoint a committee to procure a *Charter;* next, he suggested that we assemble in another part of the state. As a compliment to Dr. Osgood, who had been a regular attendant, Springfield was chosen for the May meeting, and Dr. Billings demonstrated Koch's method of bacteria cultivation.

That gathering was a success, not on account of the number of members present, but by the very instructive paper and demonstrations given by Dr. Billings, and the number of influential men of that locality who were there. Dr. Billings' paper was entitled "State Medicine," and he designated the system of state medicine as the great life-saving service of the country.

June again found the association anxious to be heard from, and a very altruistic preamble to a resolution condemning the subscription plan as pursued by the management of Harvard Veterinary Hospital was passed by a unanimous vote.

At a subsequent meeting, Dr. Eliot, President of Harvard, appeared in person, urging the association to use its influence for the Veterinary Department of Harvard University.

In April, 1886, F. H. Osgood was chosen President and the Secretary's report for the past year was, that thirteen meetings

had been held, with an average attendance of ten; also, that numerous papers had been presented which were thoroughly discussed and a large number of pathological specimens were exhibited. A farewell letter was read from F. S. Billings, who had removed to Nebraska, assuring the association of his continued interest in it affairs.

The fourth occupant of the chair as president was J. S. Saunders, he being elected April 27, 1887.

The report of the Secretary for the past year was presented, and it is recorded that this association was incorported that year.

Dr. A. Liautard was elected to honorary membership at the April meeting.

At the April meeting, 1888, J. F. Winchester was chosen to preside for the ensuing year.

That fall the subject of tuberculosis was presented by Dr. Ferguson, of Cambridge, he being a candidate for membership: the by-laws requiring each candidate to write, read and defend a thesis at a regular meeting.

The December meeting was devoted to the subject of tuberculosis as well as the following months.

At the April, 1889, meeting, A. Peters was honored with the office of President.

The record for 1889 I am unable to find, but that year I presented to the association the manuscript of the translation of the Aetiology of Tuberculosis by Koch, translated by Rev. Saure, of Lawrence, Mass., also the letter I received from Dr. R. Koch authorizing its publication. The translation of Dr. Koch's letter is as follows:

36 Kloster St., Berlin, April 29, 1889.

DEAR SIR:

In reply to the request contained in your letter of the 31st of March, I beg leave to say that you have my full authorization for the publication of the translation of my work upon the ætiology of tuberculosis.

With highest consideration.

Yours

R. KOCH.

Thos. Blackwood was elected to preside for the year 1890, and in May, of that year the subject of Rabies was considered. I was called upon to open the discussion, and said that it was difficult to form positive diagnosis without a good history or ex-

perimental inoculation to verify the diagnosis. Dr. H. C. Ernst said he did not see how anyone could doubt the existence of rabies, but inoculation was required to confirm its existence. He doubts if there are spontaneous recoveries from rabies. Muzzling of dogs would exterminate the disease, but it is impossible to enforce such a law. Dr. J. O. Whitney, of Pawtucket, R. I., cited cases occurring in man, directly traceable to bites from rabid dogs.

The meeting for March was devoted to the altruistic side of the profession when public good should be the goal of the members of this association in spite of mercenary interests or reasons of policy.

At the April, 1891-1892-1893, meetings L. H. Howard was elected as our presiding officer.

During his administration I find that we did criticise having a cattle commission in this state without a veterinarian on the board, and the Governor was the recipient of a communication signed by W. Bryden, F. H. Osgood and L. H. Howard, which was acknowledged as follows:

Commonwealth of Massachusetts,
Executive Deprtment,
BOSTON, Jan. 20, 1892.

Mr. Williamson Bryden,

36 Sudbury St., Boston, Mass.

MY DEAR SIR:

I have received the opinion of your committee, submitting the action of the Massachusetts Veterinary Association with reference to the necessity of having skilled and professional opinion upon questions relating to contagious diseases of animals.

I fully agree with the views of your association and shall endeavor, as far as in my power to carry out those views.

Very truly yours,
WM. E. RUSSELL.

At the annual meeting April, 1892, our guests were Hon. Levi Stockbridge, of the Massachusetts Cattle Commission, and Dr. George H. Bailey, of the Maine Cattle Commission. The following month Dr. A. Liautard was a guest and he favored us with a paper on "Ethics as a Means of Elevating the Veterinary Profession." (Vol. XVI., AMERICAN VETERINARY REVIEW.)

Veterinary schools and standards were considered, but the elevation of the profession was dependent largely on us as individuals. Arrangements were made to entertain the United States Veterinary Medical Association in September, the expense for the same to be met by voluntary subscriptions.

Mr. T. L. Bolton, of Clark University, favored us with a paper upon the results of the microscopic examination of a portion of the spinal cord, and lumbo-sacral nerves in a case of string halt.

The National Veterinary School in Washington, D. C., having a two-years' course was considered at the October meeting when Hon. Jerry Rusk was memoralized.

Resolutions censuring the action of certain officials of the Bureau of Animal Industry wherein their course is reprehensible as public officials were passed.

One of the unpleasant gatherings of the association was when the subject of advertising was being considered, and a member likened our profession to a trade, entirely a business transaction.

At the January, 1894, meeting J. M. Parker moved, and it was voted that a committee be appointed to report at the next meeting on the subject of tuberculosis and the following suggestions were offered:

1. That the March meeting be devoted to the consideration of tuberculosis.
2. That the members invite any person interested in the subject to be present.
3. The association employ a stenographer for that meeting.
4. To place ourselves on record as believing that certain forms of the disease in man should be recognized as contagious.

At the February meeting Dr. Howard offered the following resolution which was passed with but one objector. "That as bovine tuberculosis is recognized by the 'Contagious Diseases of Animals' act as a contagious disease, in our opinion, that being due to the same germ, certain forms of the disease in man should also be recognized by law as contagious."

At this time a committee was appointed to interview some of the well known physicians and pathologists, with the object to get them to read short papers on tuberculosis at the May meeting.

A favorable report was made at the March meeting that Drs. Ernst, of Harvard; Abbott, of the State Board of Health; Durgin, of the City Board of Health, and others had promised to attend the May meeting and take part.

Dr. Howard suggested that since certain gentlemen had agreed to take part in the May meeting, the members ought to be prepared to open the discussion by one or more members, dividing the subject in sections and being limited to ten minutes.

At the April, 1894, annual meeting Alexander Burr was chosen to preside for the ensuing year.

The May meeting was opened by A. Peters with a paper on "The Prevalence of Tuberculosis," J. F. Winchester on "Diagnosis of Bovine Tuberculosis," while J. M. Parker had for his subject "The Sanitary Conditions of Dairy Farms." Hon. W. R. Sessions, Secretary of the State Board of Agriculture, read a paper on "The Agricultural Aspect of Bovine Tuberculosis." Professors Ernst and Councilman, of Harvard; Secretary Abbott, of State Board of Health; Professor Pearson, of University of Pennsylvania Veterinary Department; Professor C. O. Lyman, of Harvard; Hon. Levi Stockbridge, of Massachusetts Cattle Commission; Dr. G. H. Bailey, of Maine Cattle Commission, and Dr. J. Foust, of Poughkeepsie, N. Y., were among those present, and their remarks were very instructive, adjournment not taking place until near midnight.

At the June meeting it was voted to have drawn up in a pamphlet form, a series of suggestions looking to the prevention of bovine tuberculosis in the state.

The suggestions made by the committee, appointed in June, and considered at the September, 1894, meeting, were ordered printed and a copy be sent to each member.

The Association was informed at the October meeting that the subscription plan at the Harvard Veterinary Hospital had been done away with by the generosity of Messrs. Heminway, of Boston, and Morgan, of New York.

The report of the Committee on Tuberculosis was adopted at the November meeting, and ordered published in the agricultural weeklies of the State, and copies sent to the Secretary of Agriculture.

The tuberculin test was under consideration at the meeting in December.

At the January, 1895, meeting the Registration of Veterinary Surgeons was under consideration and it was voted to leave the matter with the Committee on Legislation.

At the March meeting a copy of a bill providing for compulsory registration of veterinarians was presented by F. H. Osgood.

At the annual meeting, April, 1895, J. M. Parker was chosen to preside, and the subject of registration occupied our attention at that meeting and also at the May meeting.

At the June gathering marked differences of opinion on tuberculosis is recorded, and without arriving at any definite conclusions.

The meeting held September, 1895, was given entirely to interesting cases, and it is recorded that it was one of the most interesting meetings held for some time. "The everlasting subject of tuberculosis not being mentioned" is the comment of the Secretary, as published in the AMERICAN VETERINARY REVIEW.

At the annual meeting, April, 1896, J. M. Parker was reelected for the ensuing year and several names were dropped from the roll for non-payment of dues.

That fall the Army Bill was under consideration, letters were sent to the Senators and Representatives urging the passage of the bill.

The April gathering in 1897 was held at the Quincy House, when J. F. Winchester was honored with the chair. That year the dues were reduced to $3.00, and our first June outing was held at the Quarantine Station on Gallups Island, by the courtesy of the Boston Board of Health. Transportation through the loyalty of N. Ward Co. to the profession. Procedure in preparing Antitoxin was demonstrated; subsequently a shore dinner at Strawberry Hill and a moonlight sail down the harbor. With one exception, Southboro, at Deerfast Farm, our June meetings have been down the bay.

That fall the passage of a registration bill was urged.

At a special meeting in October, Prof. Theobald Smith read an essay on "The Restriction of Tuberculosis Among Dairy Cattle." At the regular meeting the question of legislation was the subject.

In November a special meeting was held when Dr. Liautard favored us with a paper on Glanders and Mallein.

At the regular November meeting, Dr. Paige gave a very interesting talk on the veterinary institutions he had visited on the Continent. Legislation was also considered.

Dr. Chas. Harrington honored us at the March meeting, and gave a very interesting and instructive talk on "His Experiences as Milk Inspector," and Mr. Keath spoke on "Bacterial Life in Milk."

At the April meeting, 1898, J. F. Winchester was re-elected. It was brought to our notice that House Bill 1406 confers extraordinary powers on local inspectors, who, in most instances, are not veterinarians and the Governor was memorilized to that effect.

During the fall of 1898 was held the first clinic at the Boston Veterinary Hospital. Since then several have taken place.

The subject of rabies was under consideration in December.

Mr. Underwood, of Harvard, was the essayist in March, his subject being warranty and evidence.

April, 1899, L. Frothingham was chosen to preside, the meetings were regularly held and aside from personal observations, the changing of the meeting place was considered.

At the annual meeting in 1900, L. Frothingham was re-elected, the question of change of meeting place was considered, but no action taken.

B. D. Pierce was chosen president at the April meeting of 1901, and the compliment was returned to him in 1902. That year it was voted that the regular meetings be held at the Boston Veterinary Hospital.

At the November meeting there was received a communication from the alumni association of the Harvard Veterinary College relative to the registration of veterinarians.

The fourth Wednesday of January in 1903 the Harvard Medical School room was our meeting-place, when the status of the veterinarian for official work and life was thoroughly discussed, but the veterinarian came out second best.

It was reported to us in March that the registration bill had passed the house.

E. C. Becket was elected at the April, 1903, annual meeting, and then it was learned that the registration bill had been signed by the Governor.

A resolution was passed unanimously in May "That only graduated veterinarians be employed in public service, thus giving official recognition of the value of veterinary science."

Dr. Paige was asked at the October meeting to represent the association, see the Governor, and find out if a list of names submitted for registrars in veterinary medicine by the association would be considered by his excellency.

Glanders was the subject for the December and January, 1904, gatherings, and elicited a general discussion. The same subject was considered at the February meeting, but the records

fail to show that the subject was discussed. It was an illustrated lecture, but the audience were not matriculants, and did not know what to expect, although the author seemed to speak with the assurance of some teachers. At the March meeting the same subject was considered and the discussion was general.

In the spring of 1904 the officers of the past year were re-elected, and that year a delegation from this body was appointed to oppose the bill at the State House introduced by the anti-vivisectionists.

The Secretary was requested to notify each member when the hearing on the bill to pay for horses destroyed on account of glanders would take place.

At the April, 1905, meeting, D. Emerson was elected President, and it was voted that in the future our regular meetings would be held at Young's Hotel.

At the May meeting it was voted to revise the Constitution and By-Laws, and the following March the revised form was adopted.

The October meeting was adjourned to the Electro-Radiating Company's rooms, where Dr. Strong, of Tuft's College, gave an instructive demonstration.

In January, 1906, correspondence was begun with the Secretary of the Connecticut Veterinary Association to further the interests of the American Veterinary Medical Association's meeting, to be held at New Haven in August.

It was voted to request that the hearing on "Compensation for Glandered Horses" be postponed until a special meeting of the association is held. The special meeting was held without reaching an agreement, and it was voted that it take the place of the regular one.

The re-election of the same officers occurred at the April, 1906, meeting, and $100 was appropriated to assist the Connecticut association in entertaining the American Veterinary Medical Association.

Aside from the June outing, that fall meetings were held at the Malden Veterinary Hospital, G. P. Penniman's Hospital in Worcester, North Packing & Provision Co., Somerville, and at Waltham, when inspection was made of the watch factory.

The records for March, 1907, show that cattle condemned in this state for tuberculosis were killed, and some were sold for beef under the fiat of the United States inspector.

It is also recorded that chained cows, reactors, were held over from Brighton, and sent out into herds where milk was produced. These cows were really under quarantine. They are boarded until such time as they are returned to Brighton for a retest with tuberculin.

A resolution was offered, disapproving of this state of affairs, and it was voted to discuss the same at the annual banquet.

F. J. Babbitt was elected President at the April, 1907, meeting.

The resolutions presented at the March meeting were revised, and the question was asked *why* the resolutions were presented.

It was voted that the revised resolutions be discussed, and the result was that they were referred.

Mallein as an immunizing or curative agent was discussed at the May meeting without arriving at a definite conclusion. A resolution was introduced at the November meeting censuring that part of the "Dick Bill" relating to the veterinarian.

In February, 1908, a resolution condemning the use of the products of tuberculous animals for human food *except* under a proper system of dairy and slaughter-house inspection was presented and *declared* accepted by the President.

At the annual April, 1908, meeting, F. J. Babbitt was re-elected. The Secretary reports that the membership is seventy-four.

At the May meeting a very interesting account of the work of the Fall River Board of Health in dealing with the milk supply and the farms supplying this commodity.

As a result, the following resolution was passed, and the same evening it was reconsidered and referred "That we urge upon the State Board of Health and the State Board of Agriculture the necessity for compulsory and uniform legislation, having for its object the complete eradication of tuberculosis from bovines within a reasonable period of years."

The Malden Veterinary Hospital was the Mecca for October, 1908, when a clinic was held.

At the February, 1909, meeting it was voted to arrange for the twenty-fifth anniversary of the organization of the association, and a committee was appointed with Dr. Howard as chairman.

At the March, 1909, meeting the business, aside from the reports of the anniversary committee, was personal observations.

Papers were read at the May meeting by Dr. A. W. Balch and W. R. Brinckerhoff, of Harvard Medical School, the former on "A Possible Cause of Azoturia," while the latter's subject was "The Pathology of Azoturia."

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

The twenty-sixth annual meeting convened in Philadelphia on March 2d and 3d, 1909.

President Marshall addressed the members as follows:

This is the twenty-sixth annual meeting of our State Association, every year of which may be considered a milestone in its history. There has been a steady, vigorous growth during this time and each year has added proof of the value and usefulness of our chosen profession. All honor to the patriots who preceded us, but there have been marvelous changes wrought in the personnel of our members. Many veterinarians have been developed in recent years who possess the attributes of the best American citizens. They are well educated, honest, attentive to duty and possess judgment of the highest quality. Their opinions have been sought and not found wanting in forming laws and regulations for public improvements in many lines. This fact is especially true in reference to sanitary measures and regulations for suppressing and controlling contagious and infectious diseases. The general public has developed confidence in us and it begins to realize the necessity and usefulness of well-trained veterinarians. In former times our profession was judged and its usefulness measured more by our poorest men, while at present we are judged more by what our best men have done and are doing and the mistakes and errors made by the few are considered as personal rather than professional.

There is no profession, trade or calling where the individual is brought more in contact with the public than ours. The veterinarian has opportunities for studying all branches of industry, citizenship, politics, morality and education that are excelled by none. His every-day life furnishes a school of the greatest pos-

sibilities. Long strides and marked progress are being made along lines that will improve our conditions directly as well as indirectly. The usefulness of a veterinarian at the present time is not measured alone by his professional ability, yet this should be his specialty. They hesitate in putting themselves forward and taking a leading part that they should be able to do better than any other class of men. Representatives from other professions step in and do what we should do. Conceit is a fault, yet not so great as the lack of self-confidence. If we lack confidence in our own ability our clients will judge us in the same way. Courage is another faculty that we should cultivate. It is said that few persons have courage to appear as good as they are. We are too liable to attribute success in our fellow man to good luck. "Good luck is the handmaid of an upright, energetic character, and the conscientious observance of duty." No man has ever succeeded and none ever will who does not possess confidence and courage. We must have confidence not only in ourselves but also in other people. "Trust men and they will be true to you, treat them greatly and they will show themselves great." Most men are honest and square and they expect these qualifications in those whose opinions they seek. There was probably never a time when so many people are looking for morality and true worth. A veterinarian must be every inch a man or he will be lost in the struggle.

It is gratifying to see many of our members interesting themselves in the different branches of agricultural and our public school work. We should cultivate this spirit. In our regular work we have experience with every form of agricultural from the worst to the best, and the man who is observing should gather knowledge of the highest importance. Some of us do not do our share in distributing this knowledge. We are too busy with necessary burdens to undertake new ones, and feel that others know how better and can talk and write more fluently. For these reasons we allow them to do the work. We should be reminded occasionally that those who have done the most to elevate our standing were our business men. The small things are the ones that count and there are few who have no time to do a little extra work.

There is a feeling at present that agriculture should be taught in our public schools. Most farmers' children work hard enough, but there is too little attention given to why certain things are done and how work might be performed better and

more effectually. Our agricultural colleges are doing a valuable work, but there is need for more work on the rudiments of agriculture. Interest should be aroused in this line and it should begin with the child. We might have a better class of farmers in a few years if more attention and better instruction could be given along these lines to our farmers' boys and girls. There is too much of an effort being made to educate them at present to become citizens of a city and they leave the best opportunities at home to eke out a miserable existence in the city.

The veterinarian has a part to play in helping educate the younger generation to see the profit, beauties and pleasures to be derived from the pursuits of agriculture. If he keeps posted himself on the great questions of the day he may be able to drop a word here and there in his usual daily work that will prove of great value in the future. He should take an active part in institute work and in every way try to build up more interest in agriculture.

There are many subjects that a veterinarian should be able to discuss at farmers' meetings that would be of the greatest advantage in directing public opinion in the proper channels. In many sections our sanitary laws are not understood. These laws were made for protection and not for persecution. It is true that any law may inflict hardships on a few, but in most cases it is for the protection and benefit of the many.

In the question of handling tuberculosis we have done a great work, but we have not done enough. There is still too much tuberculosis and too much opposition to the work of eradicating it. Some farmers are desirous of doing their own testing because they have no confidence in the ability or faithfulness of veterinarians. It has been said that more than half of the veterinarians in Pennsylvania do not know how or do not make a tuberculin test properly. Whether this be true or not there should be no reason for such criticism. If we hope to hold this work we must do it better than it is possible for any other class of men to do it and do it honestly and faithfully or not at all. This should be true whether we are testing for dealers, buyers or our regular clients. We should find out whether the animals have tuberculosis or not and if they do have it report them to the State Live Stock Sanitary Board, where they will be properly handled. If anybody wants testing done under other conditions we cannot afford to do it.

The same is true in handling other contagious and infectious diseases. It is wrong to tell our client some way to get rid of a glandered horse on the quiet and warn him of the uproar that will follow if the condition is reported to the proper state authorities. It is our duty to explain the law on the subject and see that all its requirements are carried out. If for any reason we cannot have conditions adjusted without unnecessary trouble, we can turn the work over to those who can do it properly.

We should insist, more than we have in the past, on the necessities of a thorough disinfection after glanders, tuberculosis, abortion, white scours, etc. We may have given instruction how to do this work, but we know that it was done ineffectually if at all. Very few farmers and some veterinarians are not capable of doing this part of the work. We know that stables cannot be constructed good enough, no matter how much attention is given to ventilation, drainage, light, etc., to keep such diseases from attacking the animals and spreading, if once admitted. In removing the animals that are affected we have not removed all sources of infection, and we must see that the necessary disinfection is done or we have not done our whole duty. To one who is perfectly familiar with the necessities of disinfection many stables are a conundrum to know how best to make them safe for the animals that are left or those that are to be added. How much more difficult it will be for those who do not realize this fact.

It should be the object to instil into every one who attends this meeting a desire to return home resolved to make a greater effort in the future to set the standard of veterinary medicine higher than it has ever been before. We can do this if we put into operation a determination to do better work than we have in the past. Perhaps we can respond a little more punctually when called in a professional way; be more careful in making a diagnosis and possibly put in practice better ways of prescribing treatment; watch the case more carefully till we are sure that our services are no longer needed. We may be able to take more interest in the general welfare of our clints. Ambition is contagious. If we have it ourselves we may give it to someone that will be benefited by it. We may be able to do more in creating interest in school work or in some department of agriculture. We can compare this trip to the one taken by the merchant for supplies. If he takes his goods home and never unpacks or shows them, his trip will prove a failure. He will prob-

ably never sell his stock of goods and it will not be necessary for him to return in the future for more. We should get a new supply of stock. Take it home and put it in the show window. Let people see what we have and can do and come back to the next meeting for more. Our clients will gladly excuse us for two or three days when they realize that we are after information that will be useful to the whole community.

We should make a more determined effort to arrange our work so it will be profitable to ourselves. Where there is prosperity there is integrity. A veterinarian should be able to make a respectable living for himself and family and save enough to provide for the needs of old age. There is something wrong where this is not being done, and a desperate effort should be made to ascertain the cause and rectify it if possible.

The fee which a practitioner receives for his services varies in different sections and with individuals. There is no reason why he should make calls cheaper than the human physician, and in many instances he should receive more because the work is harder and not so pleasant in all cases. As a rule we should charge as much as we can get and still leave our clients satisfied. It may be a fault with some that they are too generous and put too little value on their services; they may be poor collectors, and for these reasons do not get all they should from their toil. There is a certain class of work that no one can get paid enough for doing. Making money should not be our only object in life, yet it is one of the principal ones. A man in any calling is judged by his ability to make a respectable living for himself and family and his promptness in paying his obligations. Let us return from this meeting with a renewed determination to be better men professionally and more successful from a business standpoint.

The profession in this state has been called upon twice since our last meeting to prove its worth. These questions are fresh in our minds. In the early winter aphthous fever, one of the most disagreeable and obstinate cattle diseases, broke out in several places in the state at the same time. The disease was recognized, controlled and stamped out in record-breaking time and should reflect great credit to the profession throughout the country. These results were made possible through the fact that there was a united effort on the part of local practitioners, state and government authorities, and practically every man did his duty.

In entertaining the national association our profession was highly honored. This meeting was a record-breaker in many ways. At the present time Pennsylvania can boast of having the greatest number of members from any one state. Of the 854 members in the national association, Pennsylvania furnishes 80; New York comes next with 66 members. This was the largest meeting that the national association ever held, and the only criticism heard was the fact that we were too generous and lavish in our entertainment. The profession throughout the state provided the money with but one hint as to what was wanted. The entertainment committee was abundantly provided with funds to do all that was necessary. Personally, I wish to thank the profession for the great interest that it took and the financial assistance that it provided so generously in entertaining this great association. We trust that you all may be able to attend the next meeting, which is to be held in Chicago this fall, where we can be assured that our welcome and entertainment will be as great or greater than we provided last year.

As a token of the great appreciation which the members of the national association felt toward our state association, on the occasion of its twenty-fifth anniversary this beautiful gavel was presented. It is solid ivory trimmed with german silver, and upon it is engraved the following: "Presented to the Pennsylvania State Veterinary Medical Association on its twenty-fifth anniversary by its guests, the members of the A. V. M. A., from sister states and provinces, at Philadelphia, September 10, 1908." Let us use and preserve this beautiful memento for future generations and trust that the fraternal feeling which prompted its giving may ever continue among veterinarians.

I wish to thank you all for the great confidence that you have shown by selecting me twice your president. I feel that it is the greatest honor that it is possible for this association to confer, and I trust and hope that my successor may receive the same confidence and support that you, one and all, have extended to me.

Election of officers:

President—Dr. S. E. Weber, Lancaster, Pa.

Vice-Presidents—Dr. H. B. Cox, Philadelphia, Pa.; Dr. H. T. McNeil, Milton, Pa.; Dr. George A. Dick, Cain, Pa.

Treasurer—Dr. Francis Bridge, Philadelphia.

Recording Secretary—Dr. Stephen Lockett, Glenolden, Pa.

Corresponding Secretary—Dr. F. H. Schneider, Philadelphia.

Board of Trustees—Dr. Leonard Pearson, Dr. W. H. Hoskins, Dr. Otto G. Noack, Dr. W. H. Ridge, Dr. J. W. Sallade.

Drs. H. B. Brady, Adolf Berg, Francis Falls, G. R. Fetterolf, A. K. Davidheiser, John H. Engel and L. G. Marshall were elected members. Many of the counties of the state were heard from through the county secretaries' reports.

The Secretary's report showed the need for more activity in the enrollment of new members and a more co-operative spirit on the part of the members in contributions to the programs.

Delegates to the National, Schuylkill Valley, Maryland, Massachusetts, and Keystone Veterinary Medical Associations reported their opinions of the organizations they attended.

The committees appointed to investigate the conduct of Dr. David Roberts on the charge of advertising patent medicines and nostrums offered the following resolution, which was carried:

"That the veterinary profession of Pennsylvania condemns the method of deception adopted by Dr. D. Roberts to lull the people into a fake sense of security.

"That no one desirous of relieving the burdens of the public and claiming a professional degree resorts to expensive advertising to help them by appealing in this way for their money, but makes known any discovery of merit through the channels of the professional associations.

"His claims are such as characterize them as not well founded, and, if it was not for the thoughtless endorsements of agricutural experiment stations—often given by employees, the implied endorsements by reputable agricultural and breeders' journals whose commercial ends often prostitute their reading columns to the deception of their readers, as well as encouraging them to part with their money for remedies that have not been proven more valuable than the lines of treatment well known by every trained and educated veterinarian, this association would regard such a resolution as the present unnecessary, and such advertising schemes as beneath its notice."

The Committee on Necrology reported with sorrow the death during the half year of Dr. Walter L. Hart and Dr. Chas. E. Cullen, both of Philadelphia.

There was no report from the Committee on Publication. This brought up the necessity for some work being accomplished in this field. As a result, Dr. C. J. Marshall was appointed the new Librarian of the Association, and plans were formulated

to have the proceedings and nucleus of the association's library kept at the assembly hall in the new veterinary building at the Veterinary Department of the University of Pennsylvania.

The Committee on Meat and Milk Inspection reported favorably on the work that had been done in milk hygiene, but urged the necessity of a better scheme of milk and dairy inspection than that which was being practiced under the authority of the State Health Department.

The discussion of this subject was terminated by the following resolution:

"We, the Pennsylvania State Veterinary Medical Association, in convention assembled, believe that the system of dairy inspection promulgated by the State Health Department has not accomplished for the state what its aims and purposes called for. The selection of inspectors under the pay and allowances made has resulted in many of the positions being filled by men wholly without any training or special ability for such serious and important work. If this work is to be continued under the State Health Department, we recommend that only those furnishing evidence of fitness, training and experience be eligible for examination for these positions."

The Committee on Legislation reported that the laws pertaining to veterinary matters, live stock interests and public hygiene had so far been proven to be legal measures in the right direction, but that there was need for further legislation on such matters. If there was to be an improvement in veterinary science and police work, then there must be a big advance made in veterinary education and to this end every veterinarian should use his influence to secure appropriations for this purpose. A committee on appropriations was appointed and every member of the association was enrolled as an ex-officio member.

The Committee on Sanitary Science and Police concluded its report by offering the following resolution, which was passed:

"Resolved, That this association is opposed to the use of tuberculin by any person other than a trained veterinarian, as such use may defeat the very purpose for which tuberculin was intended. We recommend that legislation be enacted making the use of tuberculin by other than veterinarians a misdemeanor."

The Committee on Army Legislation expressed the opinion that finally all legislation pertaining to practice of veterinary medicine would have to be dealt with by the Federal Government.

The reports from the Committee on Animal Husbandry were encouraging in spite of the disorganization to which the live stock trade had been subject on account of the regulations against Aphthous Fever.

The Literary Program.

On Monday evening before an audience of ladies and gentlemen, Dr. Henry Marshall read an excellent paper on "Meat and Milk and Their Relation to Public Health."

The Committee on Publication was instructed to have this paper published in pamphlet form for distribution.

This was followed by an interesting paper by Dr. Harshberger, of the Biology Department of the University, on "The Biologist's Side of Practical Plant and Animal Breeding."*

The evening was concluded by a most entertaining stereopticon lecture on "Wild Animals in Disease," by Dr. W. Reid Blair, of New York.

On Tuesday morning Dr. Leonard Pearson addressed the Association on Aphthous Fever, with special reference to the wisdom of the "stamp out method" and its efficiency in the recent eradication of the disease in the state.

The afternoon session was occupied by papers:

1. "Rancid Odor in Milk Due to Micrococci Infection," by Drs. John Reichel and Henry C. Campbell.
2. "Contagious Abortion," by Dr. Stephen Lockett.
3. "Melanosis," by Dr. Simon J. J. Harger.
4. "Hereditary Transmissible Diseases in Horses,"† by Dr. C. J. Marshall.

This last paper caused such lengthy debate that a resolution was carried to continue the discussion at the semi-annual meeting of the association in September.

Fifty-seven members were present.

Stephen Lockett,
Recording Secretary.

MAINE VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting was held April 14, 1909, at the Bangor House, Bangor.

President Murch in the chair and Secretary Joly at his post.

* Published elsewhere in this number.

† Published in May, 1909, Review.

Members present—Drs. A. L. Murch, Bangor; F. L. Russell, Orono; E. E. Russell, New Sharon; F. E. Freeman, Rockland; R. E. Freeman, Dexter; H. T. Potter, Calais; I. L. Salley, Skowhigan; H. L. Stevens, Farmington; C. L. Blakeley, Augusta; F. W. Huntington, Portland; H. W. Lynch, Portland; W. H. Robinson, Woodsford, and Achilles Joly, of Waterville.

Visitors—Drs. J. G. Hayes and F. E. Stevens, inspectors of B. A. I.

Dr. F. L. Russell, of the Conference Committee of State Board of Health, reported that their committee had decided to present nothing special for new legislation, but to work along educational lines.

On the meat inspection bill Drs. Huntington and Joly reported what occurred at Augusta; that practically nobody took any interest in the matter; that the bill brought quite a stir-up before the Committee on Agriculture at the hearing.

On new legislation, Dr. Joly reported the different laws that were enacted in relation to the interests of the profession.

On conference with the Cattle Commission, Dr. Joly reported that the intention of the commission was to employ graduates, but possibly a few honest non-graduates might be so situated to work for the commission.

Dr. C. H. Newton, of Dover, was admitted to membership. Upon the application of Dr. J. L. Parks of the Executive Committee was not ready to report.

In the absence of the essayists the following papers were read and discussed:

"Enteritis," prepared by C. W. Watson.

"Actinomycosis," prepared by W. L. Melane.

"A Few Truths for the Future of Veterinary Medicine," prepared by H. B. Jervis.

Dr. F. C. Dwinal was absent and no reason was given for not sending his paper.

Dr. A. L. Murch was elected representative to the A. V. M. A. meeting at Chicago.

Drs. G. R. Caldwell and W. S. Pugsley were scratched from the list of membership for non-payment of dues.

The following gentlemen were appointed to prepare a paper for the next meeting, to be held in Portland July 14, at the Prebble House: Drs. Lynch, Robinson and Wescott.

A. JOLY,
Secretary.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The April meeting was held at Donaldson's Hall on the 13th of the month.

The room was full of members and guests and every man who promised to be present for the program was on hand.

The Committee on Legislation reported:

1. That the Antivivisection Bill had not been presented to the House due to the energetic work of such organizations as the Pathological Society of Philadelphia, and the Society for the Protection of Scientific Research.

2. That the bills for appropriations on behalf of veterinary education in connection with the Veterinary Department of the University of Pennsylvania for the administration of the affairs of the State Livestock Sanitary Board had passed the Houses and would probably be graciously received by the Governor.

3. That the bill enabling a practitioner to be registered on petition, *i. e.*, Registration on Petition Bill, was also likely to be passed, although strong representations were made against it.

The literary program consisted of:

1. A paper on "Treatment of Tetanus," by Dr. E. B. Ackerman, of Brooklyn, N. Y.

2. A review, by Dr. Milton E. Conard, of Westgrove, Pa., of the work he had so far accomplished and was contemplating in milk hygiene and dairy inspection, under instruction of the State Livestock Sanitary Board.

3. A paper by Dr. E. Mayhew Michener, of North Wales, Pa., on "Pericarditis in Ruminants."

The discussion of the first paper showed that tetanus is a subject still full of interest to the practitioner and one fraught with many problems for the investigator.

The address of the second speaker met with the unanimous approval of the meeting in that it offered an object lesson on the most rational method of dealing with the question of milk hygiene and dairy improvement.

The third paper was deemed of such unusual value as a contribution to veterinary literature that the meeting requested that it be published in the AMERICAN VETERINARY REVIEW.

The evening was concluded by Dr. Reichel reporting a case of acute glanders in a woman of Chalfonte, Pa., who had been infected from a horse and showed typical cutaneous lesions. His specimens were very acceptable and interesting.

The May meeting was held on the 11th of the month at Donaldson's Hall, Philadelphia.

Dr. S. J. J. Harger occupied the chair in the absence of the president and vice-president.

It was arranged to hold the next monthly meeting at the assembly hall of the veterinary department of the University of Pennsylvania on the 15th of June, so that the members should be able to meet the visiting State Board Examiners.

The Committee on Legislation reported the governor's approval of the registration on petition bill whereby practitioners who were *known* as such prior to 1884 would still be able to register on petition merely; also of the measure making it illegal to offer for sale for working purposes horsekind which are unable to work.

The chairman of the Committee on Hereditary Transmissible Diseases in Horses reported that active measures were being taken to investigate this subject.

The chairman expressed the thanks of the association for the enjoyable evening which the Ava Club of ladies gave on April 29th to the members of the association.

The literary program consisted of an excellent address by Prof. Carl W. Gay on "The Draft Horse." He dwelt upon the essentials of his conformation relative to his work, of the economic features in his production, and closed by reviewing the strong and weak points in the Belgian, Shire, Percheron, Clydesdale and Suffolk Punch.

The reports of cases included:

1. "Persistent Unilateral Swelling of the Sheath in a Horse," reported by Dr. Edgar W. Powell.

2. "Fistula in the Croup Caused by the Penetration of a Large Splinter of Wood," reported by Dr. Warren L. Rhoads.

3. "Suspected Lead Poisoning in a Calf," reported by Dr. Stephen Lockett.

The meeting adjourned at midnight.

STEPHEN LOCKETT,
Secretary.

RHODE ISLAND VETERINARY MEDICAL ASSOCIATION.

A meeting of the R. I. Vet. Med. Association was held at the Hotel Dorrance, Providence, on Saturday, January 16, 1909. The meeting was called to order by President Chas. T. Frey.

The principal business transacted was the election of officers and discussion of our proposed veterinary act, which almost became a law last year. The officers elected for the year were as follows:

Dr. T. E. Robinson, of Westerly, President.

Dr. L. T. Dunn, of Providence, First Vice-President.

Dr. G. L. Salisbury, Jr., of Lafayette, Second Vice-President.

Dr. J. S. Pollard, of Providence, Secretary.

Dr. J. T. Cunningham, of Providence, Treas.

Drs. Pollard, Frey, Dunn and Salisbury were reappointed as Legislative Committee.

A good attendance at the meeting was very encouraging, especially out-of-town members.

Meeting adjourned.

A special meeting was held at Hotel Dorrance on Manday, April 5, 1909, for the purpose of hearing the report of the Committee on Legislation. The chairman, Dr. Frey, reported progress, as the act had been passed by the House and was pending in Senate, and we had every assurance that it would soon become a law.

After a general discussion, meeting adjourned.

J. S. POLLARD,
Secretary.

SOUTH ST. JOSEPH ASSOCIATION OF VETERINARY INSPECTORS.

The Veterinary Inspectors of the Bureau of Animal Industry, stationed at South St. Joseph, Mo., met on February 23, 1909, and organized an association to be known as the South St. Joseph Association of Veterinary Inspectors.

Dr. A. T. Shipley, inspector in charge, was elected president and Dr. H. R. Collins secretary and treasurer. The objects of the association are the promotion of good fellowship and the presentation and discussion of papers of scientific and professional interest along meat inspection lines, etc.

Meetings will be held at No. 407 Illinois avenue, South St. Joseph, Mo., on the fourth Tuesday of each month.

H. R. COLLINS,
Secretary and Treasurer.

BANQUET OF THE SENIOR CLASS, VET. DEPT., U. P.

The first annual banquet of the senior class of the veterinary department of the University of Pennsylvania was held on the evening of April 22, 1909, at the Hotel Rittenhouse, Philadelphia.

The occasion proved to be a very pleasant affair and will go down in the class history as one of its most brilliant achievements.

Covers were laid for fifty members and the faculty; an orchestra furnished music during the serving of the repast, after which Toastmaster Cahill arose and, with a few well-chosen remarks, welcomed the faculty and introduced the first speaker of the evening, Provost C. C. Harrison, who responded to the toast "Pennsylvania."

The Provost was followed by Dean Leonard Pearson, who responded to the toast, "Our Department."

At the close of Dr. Pearson's remarks, Mr. H. W. Johnson rendered a pleasing violin solo. The remainder of the program consisted of the following toasts: "That Reminds Me," Dr. John W. Adams; "After Commencement, What?" Dr. S. J. J. Harger; "East and West," Dr. Carl W. Gay; "The Veterinarian Socially," Dr. W. Horace Hoskins, and a solo by Mr. Wm. H. Holdt.

The affair proved to be a most enjoyable one to everyone present and broke up at a late hour. The banquet committee consisted of Edward A. Cahill, Harry H. Howe, Marcus M. Fulton and Edward R. Records, Jr.

H. C. CRAWFORD, '09.

OREGON has a new live-stock sanitary law which went into force on the 23d day of May, at which time the state sheep inspector, W. H. Lytle, D. V. M., became the state veterinarian and was made ex-officio a member of the state board of health, working in conjunction with and under control of that board. The new law provides that all disease eradication work must be done under non-indemnity measures. Tuberculin testing of cattle is made a voluntary measure on the part of the owner and gives him the privilege of either the modified Bang system or slaughter under the rules and regulations of the federal meat inspection law.

NEWS AND ITEMS.

THE Bureau of Animal Industry has issued a circular reporting the work done by the Bureau of Entomology on the control of the cattle tick.

EXAMINATION of applicants for license to practice veterinary medicine in New Jersey will be held at the State House, Trenton, June 25-26, 1909.

THE veterinary division of the University of Minnesota Experiment Station has just been given $10,000 by the legislature for a hog-cholera vaccine plant.

THE Veterinary Alumni of Cornell, on May 14, 1909, presented to the University a portrait of Prof. James Law, the first director of the New York State Veterinary College.

DRS. A. H. MCGLASSON and James A. Rudolph, of Madison, Ind., have opened a modern veterinary hospital at the place, which is said to be the most commodious in the Hoosier state.

DR. H. A. HELA has resigned his position as U. S. veterinary inspector and started in private practice in the beautiful city of Granite Falls, Minn., where he is building a nice little hospital.

THE London Van Horse Parade, held annually to encourage an interest in the quality and care of heavy horses, recently had 457 vehicles entered in the parade, an increase of 92 over last year.

AFTER listening to Veterinarian W. G. Clark's paper on "The Relationship of Human and Bovine Tuberculosis," the Marinette County Medical Society, Marinette, Wis., elected him to honorary membership.

DR. ROBERT W. ARDARY, V. S., and Dr. James T. Ware, D. V. S., have formed a partnership for the practice of veterinary medicine and dentistry and will conduct a large veterinary hospital at Pittsburgh, Pa.

GOVERNOR JOHN FRANKLIN FORT, of New Jersey, has reappointed William Herbert Lowe on the State Board of Veterinary Medical Examiners of that commonwealth. Dr. Lowe's new commission bears date of May 5, 1909.

THE Pennsylvania Workhorse Parade Association held its annual meeting on May 31 (Memorial Day) in Philadelphia. The entire set of officers are veterinarians. Dr. Leonard Pearson is its president and Dr. C. J. Marshall is its secretary.

AMONG the members of the senior class of Smith College, Northampton, Mass., whose commencement exercises are announced for Tuesday, June 15, is Miss Helen Budd, the accomplished daughter of Dr. and Mrs. T. Earle Budd, of Orange, N. J.

ACCORDING to information received by the Department of Agriculture through the Department of State, the Belgian Government has issued a decree removing the restrictions previously imposed against the importation of cattle from the United States because of the existence of foot-and-mouth disease.

SUNOL, the one time champion trotting mare of the world, died a few days ago near Philadelphia. She was owned by John H. Shults for many years who placed her in the breeding ranks. She never was a great success as a brood mare and it is hardly probable that any of her produce will achieve great distinction upon the tracks.

DR. DE VINE, of Goshen, N. Y., who has for some time been connected with the Department of Agriculture of that state as an inspector, is acting as chief veterinarian at Albany in the absence of Dr. Kelly, who is devoting his entire time to private interests. Drs. J. P. Hart and G. R. Martin are looking after Dr. De Vine's practice at Goshen.

GOVERNOR POTHIER, of Rhode Island, on April 15, 1909, appointed the first State Board of Veterinarians in that commonwealth. The appointees were as follows: Drs. Ulysses S. Richards, of Woonsocket; Christopher Horseman, of Newport; Thomas E. Robinson, of Westerly; John S. Pollard, of Providence, and Charles T. Frey, of Warwick.

DR. WILLIAM T. SPENCER, of O'Neill, Neb., was married to Miss Winona Younkin, of Burwell, Neb., May 12. The doctor and his bride visited friends in Kansas City and Marceline, Mo., during the honeymoon. The doctor has been engaged in the quarantine division of the government service for several years and has a wide circle of acquaintances who will wish him well.

BECAUSE of its rare beauty and design, the class record of the veterinary class of 1909 of the University of Pennsylvania has been sent as part of the exhibit of the University of Pennsylvania to the Alaska-Yukon exhibition. The class record for 1909 eclipsed all efforts of previous years and was decided by the Bureau of Publicity to be the finest record in the university this year.

MINNESOTA STATE LIVE STOCK SANITARY BOARD.—The Minnesota State Live Stock Sanitary Board was well treated by the legislature recently adjourned. It received a special deficit appropriation of $54,000, and $35,000 a year for the next two years, especially for work with tuberculosis and glanders. This is in addition to its standing annual appropriation, a total of $162,000 for the biennium.

ON May 15 there was shipped from New York the famous show stable of Judge W. H. Moore, consisting of forty-six head of the highest class show horses now owned in this country. These animals will go direct to London where they will appear at the International of Olympia in June. It is not the intention of Judge Moore to exhibit in any other show abroad and the animals will return to this country.

DR. C. J. SIHLER, of Kansas City, Kan., has been engaged to conduct a series of experiments at the Kansas City stock yards with a view of putting the immunizing of swine against hog cholera upon a practical commercial basis. It is the purpose of a commission firm to undertake the immunizing of stock hogs and breeding hogs at this large hog market so that they may be safely handled in a commercial way.

THE annual meeting of the chief inspectors of the various meat inspection stations throughout the country was held in Chicago during the week beginning May 10. The annual gathering was for the purpose of comparing notes upon the special conditions arising in the inspection service at the various points; also upon the interpretation of the rules and regulations concerning newer features of inspection service.

Dr. J. H. STAUFFER DEAD—On Thursday, May 13, 1909, Dr. J. H. Stauffer, of Havre, Montana, who had been suffering from abscess of the kidney, died at the Columbus Hospital. The funeral was held from the Elks' lodge rooms under the auspices

of that order. The doctor was both an Elk and a Mason, and the pall-bearers consisted of representatives from his chosen profession (veterinarians), from the Elks and from the Masons.

Dr. L. M. Steckel made a tour through the principal German cities, visiting the veterinary colleges, the large dairy estalishments, the stockyards and slaughter houses, and the market halls, thus acquainting himself with the veterinary hygienic conditions there. He also visited Paris, where he spent several days with Drs. Martel, Godbille and Piettre, studying the veterinary regulations as carried out in the French capital. While in Paris he called on Dr. Liautard. Dr. Steckel expects to go to Budapest to attend the International Milch Congress.

Road Drivers' Association Annual Parade.—The New York Road Drivers' Association held its tenth annual parade on Saturday, May 15, in the afternoon. The judges were Mr. F. M. Ware, and Drs. F. C. Grenside and W. Reid Blair. Among the distinguished invited guests were the Hon. Raymond A. Pearson, Commissioner of Agriculture of the State of New York; Hon. John F. Ahearn, President of the Borough of Manhattan; Hon. Bird S. Coler, President of the Borough of Brooklyn; Hon. Louis F. Haffen, President of the Borough of The Bronx, and the heads of practically all the city departments. The parade presented a very pretty spectacle and was a marked success.

Police Dogs Make Good.—"Nell" and "Jess," two of the trained dogs of the police department of the City of New York, demonstrated recently their value to the department and the excellent training that they have received. After one officer had been mortally wounded and another disabled so that he could not pursue the assailant (a negro), who was soon lost to view and rapidly making his escape, these two well-trained dogs, who are graduates from Lieut. Wakefield's training kennels, were put on the trail and, after rapidly following it by the sense of smell, soon rounded up the terrified negro, who, upon sight of the dogs, each dragging a policeman at the end of his leash, seemed to have lost his taste for shooting and quietly submitted to arrest.

Saddle Horses Bring Good Prices.—The second sale of saddle horses consigned by S. T. Harbison & Co. this spring was held by the Tichenor-Grand Company, New York, a few

days ago. The evening was one of the most stormy and uncomfortable of the season, by reason of which the attendance was exceedingly small. The animals sold were of an unusually high class and probably the average was better than at any sale of saddle horses held in this city within the past year. The nineteen head realized $8,195, being an average of $431. The highest sum paid for any one animal was $610, which was realized for the chestnut gelding Knute Nelson. The bay gelding Corrigan, that many considered the best horse in the lot, brought $600, and others sold all the way from $310 up to $575.—(*Breeders' Gazette.*)

THE dairymen of Kansas City and vicinity held a largely attended meeting in the auditorium of the Kansas City Veterinary College on the evening of May 18, at which meeting Drs. Hall, Barbee and Champlain, of the food inspection department of the city, made addresses. The prominent question before the dairymen was the universal one of "How to produce clean milk and how to market it at a profit." The dairymen of this district are feeling the influence of public sentiment and the wider knowledge concerning the quality of milk on the part of the consumers, and they determined to hold a series of meetings and discuss best methods to maintain their business despite the competition of larger dairies producing certified milk. The State Veterinarian of Missouri expects to soon take up the work of examining the herds in and about Kansas City that they may be free from tuberculosis.

NEW EDITION OF THE GOVERNMENT CATTLE BOOK.—One hundred thousand copies of a revised edition of the special report on the "Diseases of Cattle," by Drs. Atkinson, Dickson, Harbaugh, Hickman, Law, Lowe, Mohler, Murray, Pearson, Ransom, Salmon, Smith and Trumbower, Bureau of Animal Industry, U. S. Department of Agriculture, have been printed by order of Congress.

While the work is of a popular character, and is intended primarily for the use of the farmer and the stock owner, it will doubtless also continue to be found useful to the student and the veterinary practitioner. The changes made in the present edition consist mainly in a revision of the chapters on diseases of the digestive organs and infectious diseases and the substitution of a new chapter on animal parasites for the chapter on that subject in the edition of 1904.

We are indebted to the New York State Department of Agriculture for the following list of bills that have passed the legislature during the past session and been signed by Governor Hughes, in the interest of agriculture:

Sen. Raines', S. 1157, regarding enforcement of quarantines.

Mr. Boshart's, A. 1663, regarding approval of work of veterinarians not in the employ of the department.

Sen. Platt's, A. 2327, relating to bringing animals into this state from other states.

Mr. Shea's, S. 1482, relating to payment of indemnity for glandered horses, etc.

Mr. Boshart's, A. 2095, giving the chief veterinarian of the department authority to quarantine infected premises, such as now exercised by assistant commissioners.

Sen. Raines', S. 2414, regarding posting of rabies notices, etc.

New York State Veterinary Medical Society.—The New York State Veterinary Medical Society will hold its annual meeting at Ithaca, N. Y., on August 25, 26 and 27, 1909. Secretary De Vine and Chairman Fish, of the local committee of arrangements, will furnish a good part of the program in the July number of the Review. These dates were decided upon after a considerable amount of careful thought on the part of the officers and the local committee of arrangements, who were desirous not to have them clash with the dates of any other meetings that are usually held around that season, so as to permit the great numbers of veterinarians from adjoining states who are in the habit of attending the meetings of the New York State Veterinary Medical Society as well as its members, every opportunity of doing so without in any way interfering with their plans to attend the meeting of the national organization at Chicago in September.

A Clipping from the "Publisher's Desk" Column of "The Rural New Yorker" of May 15, 1909.—I want to express to you my sincere appreciation of the stand of your journal in excluding from your columns the advertisement of the Ontario Veterinary Correspondence School at London, Ontario, Canada. The many in my own state, and in other states, who have parted with from $12.50 to $40 for one of their diplomas, which are absolutely worthless, is simply astounding. There is

not a state in our Union where these diplomas have a standing, and it is well for those engaged in animal industry that they do not, for such men, with a little knowledge, become the most dangerous pretenders to the welfare of the live-stock of our land.

W. HORACE HOSKINS.

We can say little to add emphasis to the above, except to explain that Dr. Hoskins is secretary-treasurer of the Pennsylvania State Board of Veterinary Medical Examiners, and is abundantly qualified to speak with authority on the subject.

INCREASING PREVALENCE OF ANIMAL TUBERCULOSIS.—The reports of the Bureau of Animal Industry of the United States Department of Agriculture indicate that tuberculosis among live-stock is steadily increasing, as shown by the number of animals found affected at the various slaughtering centers. The increase in the number of cases found is due in part, but only in part, to the increased efficiency of the method of inspection. The meat inspection figures show that nearly 1 per cent. of cattle and over 2 per cent. of hogs slaughtered are tuberculous, which is surely an alarming condition.

Feeding experiments conducted by the bureau have proved conclusively that hogs are readily infected through the ingestion of feces and milk from tuberculous cows. There is therefore no doubt that the prevalence of the disease in hogs could be greatly reduced simply by eradicating it from cattle.

Considerable testing of cattle has been done in Washington, D. C., and vicinity for the purpose of assisting the District authorities in obtaining a pure milk supply, and of obtaining for the bureau further information regarding the extent of tuberculosis in the locality and for other purposes. In these tests about 17 per cent. of the dairy cattle reacted.

The percentage of tuberculosis in various states, shown by tests conducted by the officials in those states with bureau tuberculin, indicates that from 2.79 to 19.69 per cent. of the cows react, and it is estimated that in the country at large at least 10 per cent. of the cows in dairy herds are tuberculous.

The recent agitation against the milk of tuberculous cows as human food has had the effect of causing many herds to be examined, with astonishing results not only to the owners but to the officials themselves. Can it be wondered at that so many infants and children die of intestinal tuberculosis when so many of the cows from which milk is obtained are tuberculous?

Without considering the matter as a public health question, but looking at it entirely from an economic standpoint and as a business proposition, live-stock raisers cannot afford to have tuberculosis in their herds. As an illustration, Argentina requires that all cattle imported into that country shall be subjected to the tuberculin test upon arrival, and as a consequence exporters from the United States have had the test made on cattle intended for shipment. The results of these tests showed that in some of the pure-bred herds nearly 50 per cent. of the animals were diseased, and in consequence sales were lost.

When the practice becomes general for all buyers of breeding cattle to have animals tested before placing them in their herds, the breeder of strictly healthy cattle will be much sought after. Already some breeders of pure-bred cattle have established or are arranging to establish such herds. As soon as the breeders fully understand the fact that it is unprofitable to go on breeding cattle while tuberculosis exists in their herds, much of the objection raised against the sale of live-stock subject to inspection will disappear, for it would be worth the price of several condemned animals for the owner of a valuable herd to know the fact as early as possible if the disease exists in his herd, as the longer he delays in taking steps to prevent its spread the greater will be his loss eventually. Figures for the last year secured from abattoirs where Federal inspection is maintained show that over 10 billion pounds of meat was inspected, 46 million pounds of which was condemned, nearly three-fourths being for tuberculosis.

The recent effort of the large packing interests to buy all dairy cows subject to post-mortem inspection shows how serious the plague is becoming. Sooner or later the man who raises tuberculous animals must suffer the loss, unless the loss is paid for out of public funds; and when the loss is placed upon the producer we may then know that the end of the disease is in sight.

It may at some time be necessary for the Federal government to quarantine against interstate shipments of cows from certain states where the disease prevails to a considerable extent, and require a strict supervision over all animals removed from such states for interstate shipment, and only remove the quarantine from sections of the state when it has been demonstrated that the disease either has been eradicated or is under strict local quarantine.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
American V. M. Ass'n.....	Sept. 7-10, 1909.	Chicago.....	R. P. Lyman, Hartford, Conn.
Vet. Med. Ass'n of N. J.....	July 14-15, 1909.	Atlantic City.	W. Herbert Lowe, Paterson.
Connecticut V. M. Ass'n.....	.....	New Haven ..	B. K. Dow, Willimantic.
New York S. V. M. Soc'y.....	Aug. 25, 26, 27..	Ithaca	J. F. De Vine, Goshen.
Schuylkill Valley V. M. A.....	June 16, 1909....	Reading	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Call of Chair...	Paterson, N.J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Call Exec. Com.	.....	R. P. Marsteller, College Sta.
Massachusetts Vet. Ass'n.....	Monthly.....	Boston.....	Wm. T. White, Newtonville.
Maine Vet. Med. Ass'n	July 14, 1909....	Portland	A. Joly, Waterville.
Central Canada V. Ass'n.....	.....	Ottawa	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....	Jan. 25-26, 1910.	Saginaw	Judson Black, Richmond.
Alumni Ass'n, N. Y.-A. V. C.....	.....	141 W. 54th St.	L. L. Glynn, N. Y. City.
Illinois State V. M. Ass'n.....	July 13, 1909....	Bloomington..	J. H. Crawford, Harvard.
Wisconsin Soc. Vet. Grad.....	.....	.....	S. Beattie, Madison.
Illinois V. M. and Surg. A.....	Jan. and Aug...	Louisville.....	W. A. Swain, Mt. Pulaski.
Vet. Ass'n of Manitoba.....	Not stated.....	Winnipeg.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....	July 2, 3.....	Wilmington ..	Adam Fisher, Charlotte.
Ontario Vet. Ass'n.....	....	.....	C. H. Sweetapple, Toronto.
V. M. Ass'n, New York City.....	1st Wed. ea. mo.	141 W. 54th St.	W. Reid Blair, N. Y. City.
Ohio State V. M. Ass'n.....	.....	Columbus.....	Sidney D. Myers, Wilmington
Western Penn. V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh....	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n	.....	St. Joseph....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n.....	.....	Rochester.....	J. H. Taylor, Henrietta.
Iowa Veterinary Ass'n.....	.....	Ft. Dodge....	H. C. Simpson, Denison.
Minnesota State V. M. Ass'n.....	July 14-15	Stillwater	G. Ed. Leech, Winona.
Pennsylvania State V. M. A.....	Sept.....	Philadelphia..	F.H. Schneider, Philadelphia.
Keystone V. M. Ass'n.....	Monthly.....	Philadelphia..	S. Lockett, Glenolden.
Colorado State V. M. Ass'n.....	June, 1909.....	Denver	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	June 16-17, 1909..	Omaha.....	B.F.Kaupp,FortCollins,Colo.
Rhode Island V. M. Ass'n.....	Jan. and June..	Providence ...	J. S. Pollard, Providence.
North Dakota V. M. Ass'n.....	Call of Sec'y....	Fargo	C. H. Martin, Valley City.
California State V. M. Ass'n.....	.....	San Francisco.	J. J. Hogarty, Oakland.
Southern Auxiliary of California State V. M. Ass'n.....	Jan.Apl.Jy.Oct.	Los Angeles..	J. A. Edmonds, Los Angeles.
South Dakota V. M. A.....	2dTues. inJy. '09	Sioux Falls...	J. A. Graham, Sioux Falls.
Nebraska V. M. Ass'n.....	.....	Grand Island.	H. Jensen, Weeping Water.
Kansas State V. M. Ass'n.....	.....	Topeka.....	B. Rogers, Manhattan.
Ass'n Médécale Veterinare Française "Laval".....	1st and 3d Thur. of each month	Lec.Room,Laval Un'y,Mon.	J. P. A. Houde, Montreal.
Province of Quebec V. M. A.....	.....	Mon. and Que.	Gustave Boyer, Rigand, P. Q.
Kentucky V. M. Ass'n.....	.....	Not decided ..	D. A. Piatt, Lexington.
Washington State Col. V. M. A ..	1st & 3d Fri. Eve.	Pullman.....	R. G. McAlister, Pullman.
Indiana Veterinary Association...	January, 1910 ...	Indianapolis..	E. M. Bronson, Indianapolis.
Louisiana State V. M. Ass'n.....	.....	.....	E. P. Flower, Baton Rouge.
Twin City V. M. Ass'n.....	2d Thu. ea. mo .	St.P.-Minneap	S. H. Ward, St. Paul, Minn.
Hamilton Co. (Ohio) V. A.....	.....	.....	Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n....	.....	.....	J. C. Robert, Agricultural Col.
Georgia State V. M. A.....	Nov. 16-17, 1909.	Athens.....	P. F. Bahnsen, Americus.
Soc. Vet. Alumni Univ. Penn.....	June, 1909.....	Philadelphia..	B.T.Woodward,Wash'n, D.C.
Virginia State V. M. Ass'n	July 9, 1909.....	Hampton	W. G. Chrisman, Charlo'sv'le.
Oklahoma V. M. Ass'n.....	.....	.....	W. H. Martin, El Reno.
Veterinary Practitioners' Club....	Monthly.....	Jersey City ...	A. F. Mount, Jersey City.
Vet. Ass'n Dist. of Columbia.....	3d Wed. ea. mo..	514—9th St., N. W.....	M. Page Smith, Wash., D.C.
B. A. I. Vet. In. A., Chicago.....	2d Fri. ea. mo...	Chicago.....	D. D. Tierney, Chicago, Ill.
Arkansas Veterinary Ass'n.....	.....	.....	Horace E. Rice, Little Rock.
York Co. (Pa.) V. M. A.....	.....	York, Pa.....	E. S. Bausticker, York, Pa.
Philippine V. M. A.....	.....	.....	Chas. G. Thomson, Manila.
Montana State V. M. A.....	.....	Helena.....	W. S. Swank, Miles City.
Veterinary Ass'n of Alberta... ..	.....	.....	C. H. H. Sweetapple, For. Saskatchewan, Alta., Can.
Chicago Veterinary Society.....	2d Tues. ea. mo.	Chicago	J. M. Parks, Chicago.
Maryland State Vet. Society.....	.....	Baltimore.....	H. H. Counselman, Sec'y.
St. Louis Soc. of Vet. Inspectors.	1st Wed. fol. the 2d Sun. ea. mo.	St. Louis.....	Wm.T.Conway,St.Louis,Mo.
Washington State V. M. A.....	.....	Seattle.....	J. T. Seely, Seattle.
Vermont Vet. Med. Ass'n	July	Rutland	F.W.Chamberlain,Burlington
So. St. Joseph Ass'n of Vet. Insp..	4th Tues. ea. mo.	407 Ill. Ave....	H. R. Collins, So. St. Joseph.

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